

University of Wisconsin-Stout
**Journal of Student
Research**

Volume IX, 2010



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University of Wisconsin-Stout Journal of Student Research,
Volume IX, April 2010.

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Foreword

Welcome to the 9th Edition of the *Journal of Student Research*, produced by the University of Wisconsin – Stout. The primary goal of this publication is to showcase outstanding student research and creative activities from throughout our university.

This journal is a prime example of Stout's commitment to student research and support of student-organized activities. Every stage of the production of this journal – including cover design, printing and binding, writing, and editing – was completed entirely by Stout students. The journal you are now reading is a tribute to the hard work and commitment of our students, and their dedication and professionalism will speak for itself in the following pages.

The *Journal of Student Research* can be found both in print and online versions, allowing worldwide exposure that enables students to utilize their publication to benefit future personal and professional endeavors.

As a continuation of our desire to showcase exemplary work from disciplines across our University, I am pleased to point out that this edition of the *Journal of Student Research* is the first to contain a submission from the Social Sciences. We hope that this initial submission will be the first of many from the Social Sciences and will lead to continued diversity of student work featured in this publication.

We would like to extend our appreciation to everyone involved in the production of the 9th edition of the *Journal of Student Research*. Without your hard work, dedication, and commitment to excellence, this journal would not have been possible.

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History

A special thanks to Dr. Kate Thomas for all of her hard work helping to facilitate publication of the first humanities research paper in the Journal of Student Research. Without her determination and willingness to take on new challenges, this milestone may not have been reached. Dr. Thomas' efforts have helped open the door to many more Humanities submissions in the future. Thank you again!

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College Students' Definitions of Infidelity

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Key words: infidelity, internet infidelity, college students

Abstract

The increasing frequency of the internet and other technology use to engage in social activities has spurred the question of how individuals currently view infidelity, related to the many virtual and non-virtual aspects of modern life today (Henline, Lamke, & Howard, 2007). This nonrandom pilot study investigated definitions of infidelity by surveying 64 male and female college students at a Midwestern college. It was hypothesized that male and females would differ in their definitions of infidelity, based on the literature and the Symbolic Interaction theory. Survey data was statistically analyzed using cross-tabulations, mean comparisons, independent t-tests, and reliability analysis. Results indicated no significant gender differences. Males and females included both technological and non-technological interactions in their definitions of infidelity. It would be recommended that implications for practitioners be suspended until future research would involve a larger sample and also to compare groups not only based on gender, but if currently in a partnered relationship.

Introduction

The increasing frequency of the internet and other technology use to engage in social activities has spurred the question of how individuals currently view infidelity, related to the many virtual and non virtual aspects of modern life

today (Henline, Lamke, & Howard, 2007). The current body of literature focused on traditional infidelity, defined as physical sexual intercourse outside of a primary relationship, but greatly lacked focus on online or technology related infidelity (Henline et al., 2007). Infidelity as defined by McNulty and Brineman (2007) is “any form of emotional or sexual intimacy with a person other than one’s primary dating partner” (p. 94). The studied definition of infidelity that college students have constructed is very broad (McNulty & Brineman, 2007). Narrowing this definition could increase the validity of future studies. After the researchers reviewed current literature on infidelity, male and female college students ages 18 and above were surveyed at a small Midwestern university regarding behaviors that they define as infidelity.

Literature Review

The researchers reviewed the current literature on the topic of gendered definitions of infidelity through the search engine Ebscohost. Identifying studies with a focus on definitions of infidelity proved to be a difficult task. Much of the literature was focused on feelings of jealousy or the effect of infidelity on an individual’s emotional state. However, a few studies focused mainly on participants’ definitions of infidelity, both online and off line, something that is important to consider in a technological society. Two studies were conducted outside of the United States of America, but are being used for this study because of the lack of relevant research specific to our interest. All four studies included information on men’s and women’s perceptions and definitions of infidelity or unfaithfulness. The studies focused on individual perceptions of what constitutes infidelity and within acts of sexual contact (Henline et al., 2007; Yeniceri & Kokdemir, 2006; Randall & Byers, 2003; Whitty, 2003).

Henline et al. (2007) examined the similarities,

differences, and potential linkages between perceptions of online infidelity and traditional infidelity. This was done by using a sample of 123 college students in committed relationships. The primary goals of the study were to describe the nature of online infidelity, identify similarities and differences in beliefs about online and traditional infidelity, and to examine beliefs about the possibility that online infidelity would lead to traditional infidelity. The four most frequently nominated behaviors that participants considered “unfaithful” were online sex, emotional involvement with an online contact, online dating, and other online sexual interactions. The results of the study indicated that college students in committed relationships recognize online infidelity to be comprehensive including both a sexual component (online sex, flirting) and an emotional component (talking about deeply personal things or saying “I love you”). This study also found that chatting with random people, keeping secrets from your partner, showing yourself by sending suggestive pictures or by using a webcam to an online contact should be considered unfaithful behaviors. On the other hand eight percent of participants in the study found that online interactions are not real, and nothing online could be considered unfaithful. Although a small number of participants believed that online infidelity was not real, most believed that online infidelity is a multifaceted occurrence including both a physical and an emotional component.

Yeniceri & Kokdemir (2006) examined perceptions of and explanations for emotional and sexual infidelity through a questionnaire and was administered to 404 university students from various universities in Turkey. The participants ranged from a small number who were married, students in committed relationships, and single. They were asked to indicate whether they had ever been emotionally or sexually unfaithful to their partners; 19.6% or almost one out of five of the University Students admitted that they had been

unfaithful at least once. Conversely, 17.3% claimed that their partners were unfaithful to them, while they had not been. The study included six different components of dating infidelity including legitimacy, seduction, normalization, sexuality, social background and sensation seeking. Participants were asked to indicate which type of cheating was a real act of betrayal or unfaithfulness. Results showed that 14.7% of the participants believed that emotional infidelity was unfaithful, 4.5% used the infidelity label if the behavior was solely sexual, and the majority of participants, 70.1%, believed that either type of betrayal should be taken as an example of unfaithfulness. Overall, this study found that most of the participants believed that both emotional and physical betrayals were infidelity.

Randall & Byers (2003) examined university students' definitions of having sex, a sexual partner, and behaviors of unfaithfulness. For the study, 167 students participated in a survey questionnaire. The primary goal of this study was to clearly define the terms: having sex, sexual partner, and unfaithful behavior in order to help individuals understand and utilize sexual health programs that generally use these terms. The results indicated that there was not a great gender difference in the students' definition of infidelity. It was found that infidelity did not have to include being involved with nor having sex with another person other than a partner to be engaging in unfaithful behavior to that partner. In summary, this study stated that students' definitions of unfaithful behavior included more than the traditional idea of infidelity, such as having sex or being involved with another individual other than a partner.

Whitty (2003) conducted a cross-sectional study based on men's and women's attitudes towards both online and offline infidelity. This study surveyed 1,117 people from the ages of 17 to 70. The primary goal was to discover what individuals perceive as infidelity or unfaithful behavior.

The results showed that individuals consider certain online behavior to be infidelity as well as behaviors traditionally perceived as infidelity. While many different behaviors were studied, those behaviors that carried the most threat to the relationship: dating, sharing intimate information, and sexual encounters (online or offline), were perceived most commonly as infidelity. This was due to these behaviors being perceived as the most likely to threaten to end the relationship, given that those behaviors happening online had a significant potential to move offline. This study showed that online behaviors can have a very real effect on a relationship, opposed to some beliefs that online actions do not matter. Overall, this study supported the idea that intimate relations both online and offline are considered to be infidelity.

Research has found that definitions of infidelity can consist of many different behaviors, both explicitly sexual and less so (Yeniceri & Kokdemir, 2006; Randall & Byers, 2003). Research also indicated that individuals' believe unfaithful behavior could occur both offline and online (Henline et al., 2007; Whitty, 2003). There was much research on the topic of infidelity and the consequential feelings, such as jealousy and guilt. However, the research was lacking an all encompassing definition of infidelity, both offline and online based. This study will contribute to the research by offering a more comprehensive definition of what participants, both male and female, believe constitutes infidelity as a whole, offline as well as focusing on online or technology related infidelity.

Theoretical Framework

The theory applied to this study was the Symbolic Interaction theory (LaRossa & Rietzes, 1993). Symbolic interaction theory is focused on the relationship between meanings that people share and the communications that arise around those shared meanings. The Symbolic

Interaction theory assumes that people act based on the individual meanings each person has towards their own life experiences. It also assumes that individual's meanings are influenced by the greater cultural context.

Applied to our study, the Symbolic Interaction theory would predict that each individual would have both unique and shared meanings for infidelity based on both their own experiences and society's influence. The Symbolic Interaction theory predicts that each individual will have a different meaning of infidelity, but also predicts that, with the selected group of people living in the same society, some meanings would be shared. Thus, the theory also predicts that each gender group would differ as well as share meanings of infidelity.

Purpose Statement

The purpose of this study was threefold: first, was to examine gendered perspective of definitions of infidelity with a sample of college students ages 18 and above, second, was to develop a reliable survey instrument to measure those perspectives of infidelity and, third, was that the results from this study would increase the awareness of family scholars, therapists, and counselors to help with clientele and future research, as well as with the general public to help individuals with personal relationships by supplying an idea of what infidelity might mean for one's significant other. A similar study by Whitty (2003) which examined perceptions of online infidelity identified the need to consider an array of online interactions when gathering perspectives of online infidelity.

The central research question in this study was "Is there a gendered perspective on definitions of infidelity?" The researchers predicted that there would be a significant difference of perspective between the genders on their definitions of infidelity. The hypothesis was informed by

literature that was reviewed which reported that gender plays a role in individual definitions of infidelity. This hypothesis was also supported by the Symbolic Interaction theory that assumes that individuals are shaped by their unique life experiences as well as by society. Therefore, if society shapes male and female perceptions, it would shape male and female definitions of infidelity.

Method

Participants

This study was held at a Midwestern university. The participants were 64 undergraduate students in general education classes. Of these, 25 were male and 39 were female. There were three participants between the ages of 18 -19, 27 between the ages of 20-21, 21 between the ages of 22-23, six between the ages of 24-25, and the remaining seven were 26 years and older.

Research Design

The purpose of this survey research was to draw conclusions and be able to generalize to a similar, larger population so that some inferences could be made about the attitudes of male and female college students regarding their definitions of infidelity (Babbie, 1990). The survey design type used in this study is best described as a cross-sectional design in that it was used to capture knowledge, or attitudes, from male and female college students at one point in time. Self-administered questionnaires were used for data collection. This method was used based on the rationale that it was the most efficient method to gather the data directly on campus due to the fast pace of our research course, low cost, convenience, and the quick return of data. The population the participants were taken from was the university student population, and the sample was male and female students in general education classes. The study used

a non-random purposive design, due to the researchers needs to gather information on attitudes of an equitable number of male and female college students in general education classes. Randomization was not used in order to be inclusive to all students in the classroom. Completing the Human Subjects Institutional Review Board (IRB) training provided the ethical protection of human subjects; this study has been approved by the IRB.

Data Collection Instrument

A survey was designed in order to identify the attitudes of male and female college students regarding their definitions of infidelity. The survey included a brief description of the study with an implied consent, definition of any terms not commonly known, risks and benefits, time commitment, confidentiality statement, voluntary participation, and contact information of the research team and the supervisor as well as instructions for completing the survey.

The survey consisted of two demographic questions relating to gender and age; gender is the variable being used to compare groups. Participants were then given ten closed-ended statements based on a 5-point Likert scale which measured the intensity of the respondents' attitudes ranging from one (strongly disagree) to five (strongly agree). Questions were informed by literature, theory, and a scholarly expert regarding definitions of infidelity and infidelity in our presently technological world.

The survey instrument has both face validity and content validity. Face validity refers to the instrument questions having a logical connection to the concept and research question. Because the questions and concepts addressed in the survey are inspired by literature, theory, and an expert on the subject, it was determined that they clearly related to college students' definitions of infidelity. Content

validity refers to the instrument statements' coverage of the full range of concepts under the larger topic. The questions addressed a variety of issues regarding the definition of infidelity. The survey was piloted to three college students to increase validity. Feedback showed that the survey was clear and ready for distribution.

Procedure

The survey process began with emails to the professors of general education courses stating the purpose for the study and asking permission to conduct a short survey with their students. Data was collected for this study when the researchers received permission to enter two studio art classes and one biology class in order to survey students in November, 2009. The researchers used a purposive sampling design, which lead them into general education classes that had equitable numbers of female and male students. In the first general education class that was surveyed students were informed by the researchers that they were there to ask for participation with completing a survey. One of the researchers introduced both and then informed the students why they were there and asked the college students if they would be willing to fill out a survey. Both researchers proceeded to hand out the surveys. Randomization was not used in order to be inclusive in the classroom. The implied consent was read aloud to the college students as they followed along. The college students were then informed that they could tear off and keep the first two pages of the survey. They were told that they could start the surveys as soon as the researchers and the professor left the room. When the researchers were finished, they placed an envelope on a table that would be sealed. When all the college students were finished completing the survey, one student came out of the classroom to inform the researchers they were finished. The researchers then sealed the envelope to maintain confidentiality. The second and third general

education classes that were surveyed followed the procedure described above. The researchers over-sampled to ensure the target sample number was reached in case of missing data. When all the surveys were completed, the researchers took the sealed envelope and placed it in their professor's locked office.

Data Analysis

The data was first cleaned and checked for any missing data. The results of that cleaning are indicated in the Results section. The cleaned surveys were then coded using acronyms for each variable. The first two questions on the survey were demographic variables: age and gender. The independent variable was gender. The dependent variables were then broken down into measurable survey statements aimed to measure college students: I define infidelity as keeping secrets from my partner (*KPS*); I define infidelity as spending time with someone other than my partner, with romantic or emotional interests in mind (*SPT*); I define infidelity as romantically kissing someone other than my partner (*RKS*); I define infidelity as sharing intimate information with someone other than my partner (*SIN*); I define infidelity as talking in a sexual manner to someone other than my partner (*TSX*); I define infidelity as my partner attending a strip club without me (*SPC*); I define infidelity as accessing internet pornography (*PRN*); I define infidelity as cybersex (on-line sexual conversations) with someone other than my partner (*CYS*); I define infidelity as showing yourself to someone online (pictures or webcam), other than my partner (*SHY*); I define infidelity as texting someone other than my partner with romantic or emotional interests in mind (*TXT*).

To analyze the data, the data-analyzing computer program *Statistical Package for the Social Sciences (SPSS)*, was used. The individual was used as the level of analysis.

Given that groups were being compared based on gender, data analysis included: frequencies, cross-tabulations, mean comparisons, and independent t-tests. A Cronbach's Alpha reliability analysis was also conducted.

Results

The computer program *Statistical Package for the Social Sciences* (SPSS) was used to analyze the data collected. The analyses variables were subjected to include: frequencies, cross-tabulations, mean comparisons, independent t-tests, and a reliability analysis.

The first analysis run was a frequency distribution analysis. This analysis indicated that there was no data missing from the surveys.

Cross-tabulations were run with the independent variable, *GEN*. For all dependent valuables comparing males and females, there appeared to be no large differences between genders (refer to Table 1 for Cross-Tabulations and Table 2 for Mean Comparisons).

Table 1
Cross-Tabulations

KPS						
GEN	SD	D	U	A	SA	Total
Male	8.0%	28.0%	28.0%	28.0%	8.0%	100.0%
Female	12.8%	20.5%	23.1%	38.5%	5.1%	100.0%

SPT						
GEN	SD	D	U	A	SA	Total
Male	4.0%	4.0%	12.0%	36.0%	44.0%	100.0%
Female	2.6%	10.3%	7.7%	38.5%	41.2%	100.0%

RKS						
GEN	SD	D	U	A	SA	Total
Male	8.0%	4.0%	4.0%	16.0%	68.0%	100.0%
Female	0.0%	0.0%	15.4%	46.2%	38.4%	100.0%

SIN

GEN	SD	D	U	A	SA	Total
Male	16.0%	20.0%	24.0%	28.0%	12.0%	100.0%
Female	5.1%	25.6%	38.5%	25.6%	5.1%	100.0%

TSX

GEN	SD	D	U	A	SA	Total
Male	8.0%	16.0%	16.0%	28.0%	32.0%	100.0%
Female	2.6%	12.8%	12.8%	25.6%	46.2%	100.0%

SPC

GEN	SD	D	U	A	SA	Total
Male	24.0%	28.0%	20.0%	16.0%	12.0%	100.0%
Female	17.9%	30.8%	33.3%	5.1%	12.8%	100.0%

PRN

GEN	SD	D	U	A	SA	Total
Male	28.0%	12.0%	24.0%	20.0%	16.0%	100.0%
Female	25.6%	25.6%	17.9%	15.4%	15.4%	100.0%

CYS

GEN	SD	D	U	A	SA	Total
Male	8.0%	4.0%	16.0%	32.0%	40.0%	100.0%
Female	7.7%	2.6%	0.0%	28.2%	61.5%	100.0%

SHY

GEN	SD	D	U	A	SA	Total
Male	8.0%	12.0%	4.0%	36.0%	40.0%	100.0%
Female	10.3%	0.0%	2.6%	20.5%	66.7%	100.0%

TXT

GEN	SD	D	U	A	SA	Total
Male	4.0%	4.0%	16.0%	44.0%	32.0%	100.0%
Female	7.7%	5.1%	10.3%	33.3%	43.6%	100.0%

Note. (KPS)=Keeping secrets from partner; (SPT) = Spending time with someone other than partner with romantic interests in mind; (RKS) =Romantically kissing someone other than partner; (SIN) =Sharing intimate information with someone other than partner; (TSX) = Talking in a sexual manner to someone other than partner; (SPC) =Partner attending a strip club without me; (PRN) =Accessing internet pornography; (CYS) =Cybersex with someone other than partner; (SHY) =Showing yourself to someone online other than partner; (TXT) =Texting someone other than partner with romantic or emotional interests in mind.

Table 2

Compare Means

GEN	KPS	SPT	RKS	SIN	TSX
Male:					
Mean:	3.00	4.12	4.32	3.00	3.60
SD:	1.11	1.05	1.25	1.29	1.32
Range:	4.00	4.00	4.00	4.00	4.00
Female:					
Mean:	3.03	4.05	4.38	3.00	4.00
SD:	1.16	1.07	1.25	0.97	1.17
Range:	4.00	4.00	4.00	4.00	4.00

GEN	SPC	PRN	CYS	SHY	TXT
Male:					
Mean:	2.64	2.84	3.92	3.88	3.96
SD:	1.35	1.46	1.22	1.30	1.02
Range:	4.00	4.00	4.00	4.00	4.00
Female:					
Mean:	2.64	2.69	4.33	4.33	4.00
SD:	1.22	1.42	1.15	1.24	1.21
Range:	4.00	4.00	4.00	4.00	4.00

Note. (GEN)=Gender; (KPS)=Keeping secrets from partner; (SPT) = Spending time with someone other than partner with romantic interests in mind; (RKS) =Romantically kissing someone other than partner; (SIN) =Sharing intimate information with someone other than partner; (TSX) = Talking in a sexual manner to someone other than partner; (SPC) =Partner attending a strip club without me; (PRN) =Accessing internet pornography; (CYS) =Cybersex with someone other than partner; (SHY) =Showing yourself to someone online other than partner; (TXT) =Texting someone other than partner with romantic or emotional interests in mind.

An independent samples t-test was run to compare mean difference scores for males and females. There were no significant differences between the genders (refer to Table 3).

Table 3
Independent T-Tests

	Gender		t	df	Sig.
	Males	Females			
KPS	3.00 (1.12)	3.02 (1.16)	-0.09	62	0.930
SPT	4.12 (1.05)	4.05 (1.07)	0.25	62	0.802
RKS	4.32 (1.25)	4.38 (1.25)	-0.20	62	0.841
SIN	3.00 (1.29)	3.00 (0.97)	0.00	62	1.000
TSX	3.60 (1.32)	4.00 (1.17)	-1.27	62	0.210
SPC	2.64 (1.35)	2.64 (1.22)	-0.00	62	0.998
PRN	2.84 (1.46)	2.69 (1.42)	0.40	62	0.689
CYS	3.92 (1.22)	4.33 (1.15)	-1.36	62	0.177
SHY	3.88 (1.30)	4.33 (1.24)	-1.40	62	0.167
TXT	3.96 (1.02)	4.00 (1.21)	-0.14	62	0.892

Note. (KPS)=Keeping secrets from partner; (SPT) = Spending time with someone other than partner with romantic interests in mind; (RKS) =Romantically kissing someone other than partner; (SIN) =Sharing intimate information with someone other than partner; (TSX) = Talking in a sexual manner to someone other than partner; (SPC) =Partner attending a strip club without me; (PRN) =Accessing internet pornography; (CYS) =Cybersex with someone other than partner; (SHY) =Showing yourself to someone online other than partner; (TXT) =Texting someone other than partner with romantic or emotional interests in mind. *significant @ $p \leq .05$, two tailed. Standard deviations appear in parentheses below means.

A reliability analysis was run to indicate if the variables were a reliable index to measure the major concept: College students' definitions of infidelity. Cronbach's Alpha is a measure of reliability and was 0.888. This value indicated that survey items were a reliable measure of the major concept.

The cleaning of our data resulted in the elimination

of three surveys based on inconclusive answers. Qualitative comments were received at the end of a number of surveys. These comments will be analyzed and themes determined in the Discussion section.

Discussion

Surprisingly, results did not support the hypothesis that male and female college students would differ in their views on infidelity. This could be from a lack of diversity and small sample size; in addition, the limited variability in the scale might have been a factor. Each dependent variable will be discussed in relation to how the results positioned themselves to the literature and/or the theoretical framework. Thereafter, limitations to the study, implications for practitioners, implications for future research, and concluding remarks will be discussed.

In the first survey statement there was variability of responses for both genders across the scale when asked if keeping secrets from one's partner is considered infidelity. These mixed responses could be related to the statements' lack of clarity. This supports the Symbolic Interaction theory in that individual responses will be based on unique life experiences of the respondents; each respondent will have their own view of the intended definition of "keeping secrets" (LaRossa & Rietzes, 1993). In the next survey statement, a majority of participants agreed of both genders that spending time with someone other than one's partner, with romantic or emotional interests in mind, is considered infidelity. These results were supported in the literature; Henline et al. (2007) found that infidelity includes an emotional aspect which encompasses spending time with another individual other than one's partner. When asked if romantically kissing someone other than one's partner is considered infidelity the majority of participants agreed as supported by the literature. Randall & Byers (2003) discovered that a majority

of participants believed that romantically kissing someone is infidelity. In the next survey statement a majority of responses fell in the category of undecided or agreed, when defining if sharing intimate information with someone other than one's partner could be considered infidelity. Because the survey statement did not specify the nature of the relationship with which the individual was sharing intimate information, the researchers believe this could suggest a lack of clarity in what was intended. The Symbolic Interaction theory would suggest this is in part due to the individual respondent's personal experiences with sharing intimate information with others, and how that has worked to define beliefs on sharing intimate information with someone other than a partner (LaRossa & Rietzes, 1993). In the statement asking if talking in a sexual manner to someone other than one's partner is infidelity a majority of participants agreed as supported by the literature. Sexual interactions like talking in a sexual manner with another individual were considered infidelity (Henline et al., 2007). When asked if one's partner attending a strip club without the other was considered infidelity, most participants disagreed. The next survey statement asked if accessing internet pornography constitutes infidelity; a majority of respondents disagreed. Both statement results were supported by Whitty (2003), who suggested that pornography, including attending strip clubs, did not pose a large threat to a partnered relationship. Participants agreed that having cybersex with someone other than one's partner constitutes infidelity. This is supported in the literature as Whitty (2003) suggested that online sexual interactions are considered infidelity. In the survey statement: showing yourself to someone online other than one's partner, respondents agreed that this constitutes infidelity. Henline et al. (2007) discovered that various online interactions, including online sex, emotional involvement with an online contact, online dating, and other online sexual interactions,

were considered unfaithful or infidelity.

With the last survey statement, participants agreed that texting someone other than one's partner with romantic or emotional interests in mind is considered infidelity. The researchers consulted Dr. Susan Wolfgram (interview, September, 2009) for this specific statement. Dr. Wolfgram cited her experience as a couple's therapist that this contemporary phenomenon is becoming a source of infidelity for couples and needs research. Whitty (2003) suggested that many new technological interactions that are commonplace in today's society are leading to new ideas of infidelity.

While not many qualitative comments were made, most respondents who left qualitative comments were emphasizing traditional ideas of infidelity. Statements involving traditionally perceived infidelity were not included in this study in order to focus on infidelity as it relates to technology.

Limitations

This study used a nonrandom sample and therefore unable to generalize to a larger population. The study also used a sample with limited diversity and a small number of respondents. The limited variability of the Likert scale also could be considered a limitation.

Implications for Practitioners

Because of the surprising results regarding gender differences, it is recommended that implications for practitioners be suspended until future research can further identify if any gender differences are present with a larger sample and more variability in the scale. However, all practitioners need to be mindful of how technology has impacted infidelity in this contemporary society.

Implications for Future Research

It is recommended that the next step of research be to use a larger, random, and more diverse sample to be able to generalize to college students across the country. If this study were to be replicated, it is recommended that research include statements that compare groups not only based on gender, but also include if the respondents are in a partnered relationship. Also, it is recommended to expand the Likert scale to perhaps 1-7.

Conclusion

As a result of this study, it is hoped that this will spur future research to focus more on online or technology related infidelity as opposed to traditional infidelity because of the increasing frequency that technology is being used in both virtual and non-virtual aspects of life. It is also hoped that our study will create an open dialogue between individuals in partnered relationships, practitioners, and researchers as to what infidelity constitutes. Helping induce communication will hopefully help strengthen relationships and the overall understanding of the act of infidelity in its many forms.

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Joining Silicon Carbide to Metals Using Advanced Vacuum Brazing Technology

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Introduction

This paper is based on research conducted during a ten-week summer internship in the Ceramics Branch at the NASA Glenn Research Center in Cleveland, OH. The project involved experimental research to investigate the joining response of bulk silicon carbide ceramics to a controlled expansion alloy, Kovar¹, and a light-weight high-temperature metal, titanium. The research project originated within the joining subtask of a technology development program at NASA Glenn to develop a Micro-Electro-Mechanical System Lean Direct (Fuel) Injector (MEMS LDI) for advanced aircraft gas turbine engines. The main goal of the research program is to reduce NO_x emissions by 70% over the 1996 International Civil Aviation Organization standard and to reduce CO₂ emissions by 15% from modern high-tech gas turbine engines. NASA researchers are evaluating chemical vapor deposited (CVD) bulk silicon carbide (SiC) ceramics for the fuel injector substrates while Kovar and titanium are being evaluated as fuel supply tubes. The joining subtask aims to develop enabling technology to produce thermally stable, hermetic joints between SiC and metallic substrates.

Silicon carbide was selected because of its excellent thermal and mechanical properties; this allows for higher injector operating temperatures which increase the efficiency of gas turbine engines as well as reduce NO_x and

1. Kovar is a nickel-cobalt ferrous alloy with thermal expansion characteristics similar to borosilicate glass. Kovar is a trademark of Carpenter Technology Corporation. The nominal composition (in wt %) of Kovar is 53Fe-29Ni-17Co (<1.0% C, Si, Mn).

CO₂ emissions. Kovar (density: 8,360 kg.m⁻³) and titanium (density: 4,510 kg.m⁻³) were chosen for testing because of relatively small mismatch between their coefficients of thermal expansion (CTE) and that of SiC which can reduce residual stresses introduced from joining. The CTE of SiC, Kovar and Ti are $4.1 \times 10^{-6} \text{ K}^{-1}$, $5.1 \times 10^{-6} \text{ K}^{-1}$ and $8.6 \times 10^{-6} \text{ K}^{-1}$, respectively.

Although ceramic joining technology for low use temperatures and low structural stresses has been highly developed since the 1940s, the technology of joining ceramics and ceramic-based composites for use at elevated temperatures, at high stress levels, and in corrosive (e.g., oxidizing) environments is less developed. Despite its enabling role, joining is often considered as secondary in importance in the design process. A designer may incorporate ceramics into a component as though they were metals, giving little attention to the unique joining and service requirements of ceramics. This may lead to two outcomes: i) either the part fails and the design engineers conclude that the ceramic was unsuitable and they must revert back to using metals as before, or ii) a costly redesign may be required if a ceramic must be used.

The ceramic joining technologies used today range from simple mechanical attachment such as the compression fit used in spark plugs to liquid phase processes such as brazing that is used in ceramic turbocharger rotors. Brazing is a process to join closely spaced solids by introducing a liquid metal that melts above 450C (840 F) in the gap followed by solidification of the metal supported and constrained by the solid surfaces.

Two fundamental requirements must be satisfied for a brazed joint to form: i) braze metal must wet and adhere to the joined surfaces, and ii) the joined materials must have similar expansion properties to avoid residual stresses being introduced in joined materials. Unlike brazing of metal

parts for which these requirements are rather easily met, brazing of ceramics to metals at elevated temperatures poses considerable challenge.

Most ceramics are inherently difficult to wet using common filler metals which simply ball up when melted in contact with ceramics. A new family of alloys, collectively called Active Braze Alloys (ABA), has been developed to braze ceramics. In addition, the significantly different contraction properties of metals and ceramics induce considerable residual stress and increase the propensity for the brittle ceramic to fracture. These problems are compounded by the extreme reactivity of molten fillers with atmosphere or contaminants from flux residues (when protective fluxes are used). Ideally, the braze filler should react with the ceramic in a controlled manner in order to form a thin interfacial layer of wettable reaction products that would promote wetting and facilitate braze spreading and bonding upon solidification while avoiding excessive chemical attack and degradation of the ceramic.

Thus, formation of brazed joints is controlled by a number of key variables such as contact angle, surface tension, viscosity, density, filler/ceramic reactivity, surface preparation, joint design and clearance, temperature and time, rate of heating and cooling, atmosphere and thermal expansion properties of substrates and filler metal, and the strength, stiffness, and ductility of the filler and joined materials.

The self-joining behavior of silicon carbide ceramics has been reported in earlier studies [1-3]; however, research studies on joining of SiC to high-temperature alloys are scant. The present work aims to contribute to the technical literature in this area while attempting to demonstrate the feasibility of joining SiC to metals for NASA's fuel injector program. The research reported in this paper was conducted as part of Lewis' Educational and Research Collaborative Internship Program

(LERCIP) over a ten-week period during June-August 2009. The objective was to demonstrate the joining of silicon carbide to titanium and Kovar, and investigate the integrity, microstructure, chemical interaction, and microhardness of the joint with the aid of optical microscopy (OM), scanning electron microscopy (SEM), energy dispersive spectroscopy (EDS), and Knoop microhardness testing.

Experimental Procedure

The first step in the research was to identify a braze filler suitable for joining the silicon carbide ceramics to Kovar and Ti. For this purpose, an Active Braze Alloy (ABA), was identified. The ABAs have been designed to contain a reactive element (e.g., Ti, Cr, Zr etc) that induces a reaction of braze with the ceramic and decreases the contact angle thus facilitating braze spreading and bonding. Three ABA's, Incusil-ABA, Cusil-ABA, and Ticusil, each containing different percentages of Ti as an active metal, were selected for brazing runs. The chemical composition, liquidus temperature, and selected physical and mechanical properties of these baze alloys are listed in Table 1. These brazes were obtained from Morgan Advanced Ceramics, Hayward, CA in either foil or powder form. Two types of silicon carbide substrates were used for brazing: chemical vapor deposited (CVD) silicon carbide, and sintered silicon carbide (called, Hexoloy SiC). Unlike the chemical vapor deposited (CVD) SiC, Hexoloy SiC (a product of St. Gobain) is a sintered silicon carbide (α -phase) material. The material is designed to have a homogeneous composition and is produced via pressure-less sintering of fine (submicron) silicon carbide powder.

Silicon carbide and metal substrates were sliced into 2.54 cm x 1.25 cm x 0.25 cm pieces using either a diamond saw (for SiC) or a ceramic blade (for Ti and Kovar). The braze foils (~50 μ m thick) were cut into 2.54 cm x 1.25 cm

pieces. All materials were ultrasonically cleaned in acetone for 15 min. prior to joining. The braze foils were sandwiched between the metal and the composite, and a normal load of 0.30-0.40 N was applied to the assembly. Braze foils are easier to use than braze powders especially for small gaps in which powder paste application could be difficult. Additionally, the residual organic solvents in powder pastes could cause soot formation and furnace fouling. However, as braze powders are used in industrial work, a few braze runs were made using braze powders in place of foil in order to examine the differences, if any, when using foils and powders. For this purpose, braze powders were mixed with glycerin to make a thick paste with dough-like consistency, and the paste was applied using spatula to the surfaces to be joined. The assembly was heated in an atmosphere-controlled furnace to the brazing temperature (typically 15-20 °C above the braze liquidus) under vacuum (10^{-6} - 10^{-5} torr), isothermally held for 5 min. at the brazing temperature, and slowly cooled to room temperature. A total of 35 separate joints were created.

The joined samples were visually examined, then mounted in epoxy, ground and polished on a Buehler automatic polishing machine using the standard procedure, and examined using optical microscopy (Olympus DP 71 system) and scanning electron microscopy (SEM) (JEOL, JSM-840A) coupled with energy dispersive x-ray spectroscopy (EDS). The elemental

Table 1.
Selected Properties of ABAs and Substrate Materials used for Brazing

Braze	Braze Composition (wt%)	TL, C	E, GPa	YS, MPa	UTS, MPa	CTE×106, K-1	% El	K, W/ mK
Incusil- ABA®	59Ag-27.3Cu- 2.5In-1.25Ti	715	76	338	455	18.2	21	70
Cusil- ABA®	63Ag-35.3Cu- 1.75Ti	815	83	271	346	18.5	42	180
Ticusil®	68.8Ag-6.7Cu- 4.5Ti	900	85	292	339	18.5	28	219
SiC	100% α -phase	-	466	-	-	~4*	-	-
Kovar	53Fe-29Ni- 17Co (<1.0% C, Si, Mn)		137	344	516	11.5**	30	17.3
Ti	Commercial purity		105	480	550	9.7**	15	17.2

E: Young's modulus, YS: yield strength, TS: tensile strength, CTE: coefficient of thermal expansion, %El: percent elongation, K: thermal conductivity. * 0 -1000°C, **30 – 900°C, *** 0 – 540°C, ®Morgan Advanced Ceramics, Hayward, CA.

composition across joints was accessed with the EDS and presented as relative atomic percentage among the alloying elements at point markers on SEM images. The polished joints were subjected to microhardness test with a Knoop micro-indenter on Struers Duramin-A300 machine under a load of 200 g and loading time of 10 s to develop hardness profiles across joints. Multiple hardness scans were accessed across joints to check the reproducibility of the measurements.

Results and Discussion

All self-joined SiC substrates with the three brazes revealed excellent, crack-free joints. Similar baseline data on self joined Ti and Kovar substrates confirmed the bonding capabilities of all braze alloys. Figure 1 shows the joint microstructure in self-joined SiC (Fig. 1a & b) and self-joined Kovar (Fig. 1c) made using Ticusil braze. The

braze interlayers in self-joined SiC were well-defined and very consistent. The self-joined Kovar revealed some voids, possibly due to solidification shrinkage. In self-joined Ti, the braze layer appeared to reconstitute itself with the Ti substrates and obliterated the braze layer boundary which was no longer visible thus yielding a homogenous material (some shrinkage voids formed during braze solidification and decorated the boundary). Overall, these self-joining trials confirmed that the active metal Ti induces a surface modifying reaction and promotes wettability (contact angle $< 90^\circ$). These baseline tests were used to confirm the wettability enhancing role of titanium in ABAs in the absence of residual stresses resulting from a mismatch between the coefficients of thermal expansion (CTE) of joined substrates.

In CVD SiC/Cusil ABA (1 foil)/Ti joints, SiC did not bond with Ti because of incomplete wetting of SiC by braze. However, there was good wetting of Ti by braze. Using two braze foils in place of one did not yield improved surface coverage; additionally, three braze layers were also used. With 2- and 3- braze foils, the braze region was consistent but with some voids present, and a reaction layer (possibly nickel- or titanium silicide) had formed. However, the SiC substrate in both samples exhibited significant cracking, both parallel and perpendicular to the braze region. Significant areas near the joint showed evidence of melting of the Kovar substrate. Some of the braze constituents may have diffused and dissolved into Kovar thus lowering its liquidus temperature. Large voids visible throughout the braze layer also suggested possible melting and solidification.

With Cusil-ABA paste in place of foils (Fig. 2), however, no cracking was visible. The braze region was very consistent (Fig. 2a), and there was no separation between braze and SiC. Optical microscopy and SEM showed a distinct dark layer ($\sim 3\text{-}5\ \mu\text{m}$ thick) at the braze/SiC interface (Figs. 2b & c); presumably a titanium silicide reaction layer based

on the elemental concentrations accessed via EDS (Figs. 2d & e). The Knoop hardness profiles (Fig. 2f) displayed the expected behavior with a sharp discontinuity at the SiC/braze interface. Although the joint exhibited good wetting, preliminary mechanical testing showed that the joint was not very strongly bonded. Research on diffusion bonding of SiC laminates using titanium interlayers has shown that titanium silicides exhibit strong thermal expansion anisotropy [4]; this behavior could lead to uneven shrinkage during cooling of the joint leading to residual stresses that would weaken the joint in spite of good chemical wetting and bonding. Reaction layers in self-joined SiC using Ag-Cu-Ti filler have been shown to be composed of Ti_5Si_3 and TiC[1].

In Hexaloy SiC/Cusil ABA (1 Foil)/Kovar joints, significant cracking in SiC substrate perpendicular and parallel to the braze region occurred. Additionally, micro-cracking occurred within SiC/braze reaction layer and Kovar/SiC reaction layer. The reaction layer plus the braze region was $\sim 180\text{ }\mu\text{m}$ thick. The Hexoloy SiC/Cusil-ABA/Kovar joints with double braze foils also displayed cracks within SiC both transverse and parallel to the joint (Fig. 3a). The braze region appeared to be microstructurally consistent (Fig. 3b) and displayed a reaction layer at SiC/braze interface. Nickel and silicon enrichments were detected in this reaction layer using EDS; this could suggest possible formation of nickel silicide. The SiC/Cusil-ABA/Kovar joint made using braze paste displayed significant cracking in SiC both perpendicular and parallel to the braze region. The braze region exhibited considerable variation in its microstructure together with significant interaction between braze and both SiC and Kovar. These joints were fabricated using SiC and Kovar substrates of the same thickness (3mm) to reduce warping; however, residual stresses in the joint were evidently high as was evidenced by the significant amount of cracking in the SiC substrates. In spite of large residual

stresses, Cusil-ABA formed an adherent joint with SiC and Kovar and revealed a reaction layer (possibly nickel silicide) further supporting the conjecture that nickel silicide possibly forms a stronger bond with SiC than does titanium silicide.

In SiC/Incusil-ABA/Kovar joints with either single- or double braze foils, cracking parallel and perpendicular to the braze region occurred in the SiC substrate (Fig. 4a). The braze region was consistent and revealed chemical interaction with the substrate together with the formation a dark layer at the joint interface (Fig. 4b). The microhardness distribution for this joint is shown in Fig. 4c. In SiC/Incusil-ABA (1 foil)/Titanium joints, major cracking parallel and perpendicular to the braze region occurred throughout SiC and a large gap appeared between SiC and braze. A diffused reaction layer formed at Ti/Incusil-ABA interface. Use of 2 foils eliminated cracks parallel to the joint; however, cracks transverse to the joint persisted in the SiC substrate. There was a ~20 μm gap between SiC and braze region but the bonding between the braze layer and Ti was excellent. There shall be less effective stress accommodation in Incusil-ABA than Cusil-ABA owing to the former's higher yield strength (338MPa) than the yield strength (271 MPa) of Cusil-ABA; the lower yield strength of Cusil-ABA will facilitate stress accommodation via plastic flow. Initial results suggest that, although the SiC/Incusil ABA/Kovar bonds are strong, residual stresses are higher and produce more significant cracking than when using Cusil ABA as a braze material.

These preliminary research outcomes suggest that as far as wettability enhancement and surface coverage are concerned, the selected ABAs (Cusil-ABA, Ticusil and Incusil-ABA) are adequate to join SiC to Ti and Kovar. However, extensive substrate cracking without joint failure observed in some joints suggests that residual stresses during joint fabrication possibly override and inhibit the beneficial effects of chemical reaction-induced wettability and bonding.

Thus, engineering considerations related to residual stresses and strains could take precedence over chemical factors that facilitate joining.

Large residual stresses from brazing could cause the ceramic to fracture without failure of the brazed joint. Residual stresses are a major concern in ceramic-to-metal joints because of the inherent brittleness of ceramics and fracture may occur if these stresses cannot be managed. One strategy to manage residual stresses is judiciously arranged compliant interlayers within the joint prior to brazing [5]. Residual stresses in joints are more effectively accommodated by multiple interlayers than single layers. However, multiple interlayers also increase the number of interfaces and the probability of defects besides increasing the joint thickness.

Table 2
Calculated Strain Energy in SiC in SiC/Ti and SiC/Kovar Joints made using Ni and Cu Interlayers

Joint with Interlayer	Strain Energy in Silicon Carbide (mJ)		
	Incusil-ABA	Cusil-ABA	Ticuil
SiC/Cu/Kovar	1.59	1.66	1.73
SiC/Cu/Ti	1.44	1.49	1.54
SiC/Ni/Kovar	6.74	6.97	7.16
SiC/Ni/Ti	6.17	6.34	6.49

In order to investigate how residual stresses influence and are influenced by multilayer joints, the combined effects of metal (M), ceramic (C), and interlayer material (I) must be considered. Analytical and numerical models of residual stress distribution have been developed [6,7]. A numerical model for strain energy in ceramics in brazed joints developed at MIT [6,7] allows analytical approximations to the numerical model. For well-bonded ceramic-metal joints, the elastic strain energy, U_{eC} , in the ceramic substrate for a flat-back (e.g., disc-shaped) joint configuration can be estimated from [6,7]

$$U_{e,c} = (\sigma_{YI} 2r^3 / EC) \{0.03\Pi_I + 0.11\Phi + 0.49\}$$

$$\text{where } \Phi = 1 - \left(\frac{\alpha_M - \alpha_I}{\alpha_C - \alpha_I} \right)^m, \text{ and } \Pi_I = \frac{(\alpha_M - \alpha_C) \Delta T E_I}{\sigma_{YI}}$$

Here σ_{YI} is the yield strength of the interlayer, r is the distance from the center of the joint, E_C and E_I are the elastic moduli of the ceramic and the interlayer, respectively, and α is the CTE of the subscripted phases (i.e., C, M and I). The exponent $m=1$ for $\alpha_I > (\alpha_M + \alpha_C)/2$, and $m=-1$ for $\alpha_I < (\alpha_M + \alpha_C)/2$. Using the preceding model equations and the property data in table I (and handbook data for Ni and Cu interlayers), strain energies for joints made using the three ABAs were calculated using MS-EXCEL. The results summarized in Table 2 show that the strain energy varies between 1.4-6.7 mJ. Similar calculations for joints made without ductile interlayers yield higher strain energy values; for example, for SiC/Kovar joints made using Cusil-ABA, the calculated strain energy, $U_{e,c}$, is 17.9 mJ, which is appreciably greater than the strain energy obtained with the use of ductile Cu and Ni interlayers (Table 2). Thus, judicious arrangement of stress-absorbing compliant layers of ductile metals such as Cu and Ni within the joint could reduce the strain energy and propensity for joint failure. Research on the use of single and multiple Ni and Cu layers to join SiC was also undertaken during the ten-week period at NASA Glenn. Several joints with multiple interlayers of Ni, Cu and other metals were created and characterized to test the effectiveness of this strategy to manage residual stresses. The results of these tests will be presented elsewhere [8].

Future Research and Applications

Future research will include further investigation of single and multiple Ni and Cu layers utilizing mechanical testing in order to evaluate the effectiveness of this

approach and its ability to absorb residual stresses. Joints consisting of Kovar and titanium tube material bonded with SiC substrates will be fabricated and characterized to determine the effect of increased geometric complexity on residual stress levels within the joints. These joints will be sectioned and characterized in a similar fashion to the rectangular substrates previously discussed. Optical microscopy, scanning electron microscopy coupled with energy dispersive x-ray spectroscopy, microhardness testing and mechanical testing will be conducted to assess the ability for the brazes to produce thermally stable, hermetic joints between SiC substrates and metallic tube materials. Applications for this research as a key enabling technology are broad. Direct applications include the completion of a Micro-Electro-Mechanical Lean Direct Injector for subsonic gas turbine engines. The injector can be utilized in many applications ranging from military ground and aero turbine engines as well as commercial jet engines. This would have a direct impact on emissions as well as the efficiency of the engines allowing for cleaner and lower cost operation. With the increased interest in utilizing ceramics within turbine engines to allow for higher operating temperatures, metal to ceramic joining optimization will become an increasingly important enabling technology for ceramic integration.

Acknowledgment:

Thanks are due my NASA mentor, Mr. Mike Halbig, Materials Research Engineer, U.S. Army Research Laboratory's Vehicle Technology Directorate, and research advisor and collaborator, Dr. Jay Singh, Chief Scientist, Ohio Aerospace Institute, NASA Glenn Research Center. Appreciation is expressed to Lewis' Educational and Research Collaborative Internship Program (LERCIP) for a Summer Internship Award.

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Visible Body Modifications and Future Employment

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Key Words: visible body modifications, future employment,
college students

Abstract

It is important to investigate male and female college students' perceptions on visible body modifications (VBM) in relation to future employment given the uncertain economy and how VBM can be a risk factor in obtaining employment (Kramer, 2006). This nonrandom pilot study examined the perceptions of 79 college students regarding VBM and the effect those modifications have on future employment. It was hypothesized that female college students would report considering VBM to a greater extent regarding future employment. Data was analyzed using: frequencies, cross-tabulations, mean comparisons, independent t-tests, along with Cronbach's Alpha reliability analysis. The results indicated one significant gender difference in support of the hypothesis. College career specialists need to focus on male college students who consider the employment consequences of VBM less than females. Implications for future research would include a larger, random, and more diverse sample to be able to generalize to the larger population of college students.

Introduction

Current research supports that there is a connection between individuals with visible body modifications (such

as tattoos and piercings) and societal and familial views (Firmin, Tse, Foster, & Angelini, 2008; Resenhoeft, Villa, & Wiseman, 2008; Horne, Knox, Zusman, & Zusman, 2007; Kramer, 2006). Within the existing literature, researchers agreed that those individuals with visible body modifications (VBM) were viewed differently from those individuals without visible body modifications (Horne et al., 2007). Specific views that society attributes to individuals with VBM are highly noticed in the workplace (Kramer, 2006). Research suggested that employers target employees with VBM for their VBM, perhaps even telling employees to cover their modifications in the workplace. However, individuals viewed their modifications as self expression, self identity, and/or religiously significant (Kramer, 2006). Is there enough evidence among researchers to claim that VBM could affect future employment and are there gender differences to take into account? Do individuals refrain from VBM because of the difficulty in finding employment during these uncertain economic times? After the researchers reviewed the current literature on this contemporary issue of the relationship between VBM and future employment, male and female college students were surveyed, at a small Midwestern University. The students were surveyed concerning their views regarding the affects that VBM could have on future employment, and if they think about future employment when getting a VBM.

Literature Review

The researchers analyzed the existing literature on the subject matter of college students' perspectives on VBM and how it impacts future employment in their field. Regarding college students' perspectives on body modifications, it was difficult to acquire findings about their attitudes towards the affects that tattoos and piercings have on future employment. Of the literature that was reviewed, the primary focus was

on the attitudes of college students with body modifications and societal views toward those candidates. However, one study focused on behaviors, attitudes, and elucidations of college students with body modifications and the differences between male and female views. All four studies examined found a relationship between VBM and the effects they have on familial, societal, or individual perceptions. The literature attempted to discern how VBM were perceived by employers, familial relations, and friendships. The studies focused on variables such as meanings, religious or personal, of VBM, how modifications impair judgment, and the intensity of the affects that body modifications (Firmin et al., 2008; Resenhoeft et. al., 2008; Horne et al., 2007; Kramer, 2006).

Firmin et al. (2008) examined Christian college students' perceptions of VBM. The study reviewed the correlation between individuals with VBM and societal views. The authors stated the importance of Biblical meaning behind a participant's VBM. This study found that individuals with VBM demonstrated significant meaning and purpose in their life. The findings of this study also showed that participants had received both encouragement and discouragement about their VBM from family and friends.

Resenhoeft et al. (2008) examined the connections between individuals with tattoos and how tattoos ultimately harm a person's perceptions. This included looking at two specific experiments; both showing college students a photograph of a woman with either a visible tattoo or no tattoo at all. The experiments that were performed examined how individuals with tattoos correlated to the perceptions of others. In both experiments, participants were asked to rate the women based on 13 personality characteristics; fashion ability, athleticism, attractiveness, caring ability, creativity, determination, motivation, honesty, generosity, mysteriousness, religiousness, intelligence, and artistic ability. This type of experiment was used to test college

students' views on the women with the visible tattoos and the correlation they have on their personal perceptions. The authors found that after the first experiment was conducted, the participants viewed a woman with a dragon tattoo as less physically attractive, as well as having negative personality traits, whereas the model without the tattoo was viewed as more physically attractive and intelligent. The authors also found that after the second experiment was conducted, the participants viewed a woman with a smaller and less visible tattoo of a dolphin to have had no significant multivariate differences compared to the model without the tattoo. Overall, the model without the tattoo was viewed as being more religious while demonstrating more honesty. The study found that after both experiments were performed, it was evident that people with tattoos were viewed differently from those individuals without tattoos, and often perceived negatively.

Horne et al. (2007) examined college students' behaviors, perceptions, and interpretations towards VBM. This study reviewed the correlation between VBM and the participants' self-expression and identity. This study also showed, in great depth, how female participants were objective targets for piercings compared to male participants who were viewed as irregularities to visible piercings. The authors affirmed the magnitude of the participants' view on their VBM, and how the views of VBM varied from both male and female participants. Overall, the findings in this study showed that both male and female participants received both unconstructive and affirmative criticism from their VBM.

Kramer (2006) examined the experiences between employees with VBM and employers' perspectives. The study reviewed previous cases of employers' reactions to an employee's body modifications and also examined the correlation between VBM and negative perceptions from their employers. The study also observed that employees

displaying piercings and tattoos are impacted by public employers and what they prohibit in the workplace, regardless of employee's personal taste or right to individual expression. In regard to freedom of speech, expression, and religion, individuals have the right to what they portray visibly on their body; however, there is an effect on an employer's prohibition policies of VBM. Employers' prohibition policies must follow federal and state laws in terms of what they deem to be unsuitable for their company. Conclusively, this study found that employers must beware of employees with VBM in terms of religious meaning, individual expression, and the right to free speech.

Overall, this research topic was lacking on general information in regards to what college students perceive about VBM, and if they have contemplated how body modifications impact future employment. Research has found a relationship between attitudes of college students with body modifications and societal and familial views (Firmin et al., 2008; Resenhoeft et. al., 2008; Horne et al., 2007; Kramer, 2006). Also, previous researchers have found that employees with VBM are affected by employer's prohibitions in the workplace (Kramer, 2006). Very little research has gathered specific data pertaining to college students' attitudes towards being a visible body modified individual or a non-visible modified individual and the overall effects that VBM have on future employment as well as gender differences. This is the gap that the present study will begin to fill.

Theoretical Framework

The theory used to inform this study was the Exchange Theory framework (DeGenova & Rice, 2002). The Exchange Theory assumes that individuals choose behaviors based maximizing rewards and minimizing costs. An individual seeks relationships for friendship, marriage, or other personal benefits, which will ultimately be rewarding.

On the contrary, individuals tend to stray from relationships with minimal benefits and maximum costs.

As applied to this study, the theory would predict that college students who choose VBM could experience negative consequences for future employment but move forward with the modifications for personal rewards that outweigh the costs. The theory would also predict that college students have the propensity to maximize their rewards by recognizing the impact that VBM could have on employer views of them and subsequent future employment.

Purpose Statement

The purpose of this study was threefold: (1) to examine the attitudes of college students regarding VBM and future employment, investigating whether there will be gender differences; (2) to develop a reliable survey instrument to measure these attitudes, and, (3) for the findings from this study to increase awareness for future investigation on the perceptions of college students with VBM and future employment. The authors found a similar study by Horne et al. (2007) who examined college students' attitudes, behaviors, and interpretations of VBM. Horne et al. found that both male and female participants received both constructive and unconstructive criticism from family, friends, and co-workers regarding their VBM.

The central research question in this study was, "What is the gendered college student perspective on VBM and future employment in their field?" The authors predicted that there would be a difference between female and male students' perceptions of VBM and future employment. It was hypothesized that females would consider future employment more when considering a VBM because females tend to be more concerned with others' views. The authors' hypothesis was informed by the literature.

Method

Participants

The location of this study was a Midwestern University. The participants were 79 undergraduate, male and female students, in construction classes and Human Development and Family Study classes. Of these 79 students, 29 were male and 50 were female. There were 16 participants between the ages of 18 and 19, 38 participants between the ages of 20 and 21, 17 participants between the ages of 22 and 23, four participants between the ages of 24 and 25, and the remaining were 26 or older.

Research Design

The purpose of this survey research was to be able to generalize to a similar, larger population so that some assumptions could be made about the attitudes of this group towards VBM and future employment (Babbie, 1990). The survey design type is best described as a cross-sectional study design in that it was used to capture knowledge, or attitudes, from male and female college students at one point. The form of data collection was self-administered questionnaires. The rationale for using this method was that it was the most efficient method to gather the data directly on campus due to the fast pace of our research course, convenience, low cost, and the quick return of data. The population was the Midwestern university student population. The sample was male and female college students in Construction and Human Development and Family Studies classes. The researchers went into Construction and Human Development and Family Studies classes specifically to obtain an equitable number of male and female students. The study used a non-random purposive design, because the purpose was to gather data on attitudes of male and female college students in Construction and Human Development and Family Studies classes. Randomization was not used in order to be inclusive in the

classroom. The ethical protection of human subjects was provided by completing the Human Subjects Institutional Review Board (IRB) training; this study has been approved by the IRB.

Data Collection Instrument

A survey was designed to identify the attitudes of college students regarding VBM and their impacts on future employment. The survey included a brief description of the study with an implied consent, definition of any terms not commonly known, risks and benefits, time commitment, confidentiality, voluntary participation, and contact information of the research team and the supervisor as well as instructions for completing the survey.

The survey consisted of two demographic questions regarding gender and age. Participants were then given five closed-ended statements based on a 5-point Likert scale which measured the intensity of the respondents' attitudes ranging from one (strongly disagree) to five (strongly agree). Questions were created by reviewing literature and theory concerning VBM and future employment.

The survey instrument has both face validity and content validity. Face validity refers to the instrument questions having a logical connection to the concept and research question. Because the questions and concepts in the survey were inspired by literature, it was determined that they connected the relationship between VBM and future employment. Content validity refers to the instrument statements' coverage of the full range of concepts under the larger topic. The questions addressed a broad range of issues regarding VBM and future employment. The survey was not piloted prior to distribution.

Procedure

The survey process began with an email to the professors of the Human Development and Family Studies and Construction courses stating the purpose for the study and asking permission to survey their students. Data for this study was then collected when the researchers received permission to enter these classrooms to survey the students in November 2009. The researchers used the purposive sampling design which led them into classes where there were an equitable number of male and female students. The first two Human Development classes that were surveyed students were informed by the professor that two researchers were there to ask for participation with completing a survey. As one researcher introduced them, the other researcher handed out the surveys. Randomization was not used in order to be inclusive in the classroom. The implied consent was read aloud to the college students as they followed along. The college students were then informed that they could keep the first two pages of the survey. They were told that they could start the surveys as soon as the researchers and the professor left the room, however the professors did not leave the room. When the researchers were finished explaining the surveys, they placed an envelope on a table, in the front of the class, where the completed surveys would be placed. Then the researchers informed the students that the envelope would be sealed. When all the college students were finished completing the survey, the professor went outside of the classroom and informed the researchers. The researchers then sealed the envelope to maintain confidentiality. The Construction class that was surveyed followed the above procedure. When all the surveys were completed, the researchers took the sealed envelopes and placed them in their professor's locked office.

Data Analysis Plan

The data was first cleaned and checked for any missing data. The cleaned surveys were then coded using acronyms for each variable. The first two questions on the survey were demographic variables: age and gender. Each survey question was a dependent variable and given an acronym name: While considering a tattoo/piercing I think about my future employment (*FRE*); While considering a tattoo/piercing I think about the location on my body and if visible to an employer (*LOB*); While considering a tattoo/piercing I think about the design and if it would be offensive to an employer (*TPC*); While considering a tattoo/piercing I think about how a future employer may perceive me (*WOT*); While considering a tattoo/piercing, I take into consideration that I may not get hired (*AOE*).

To analyze the data, the data-analyzing computer program called the *Statistical Package for the Social Sciences (SPSS)*, was used. The individual was used as the level of analysis. Given that groups were being compared based on gender, data analysis included: frequencies, cross-tabulations, mean comparisons, and independent t-tests. A Cronbach's Alpha reliability analysis was also conducted.

Results

The computer program *Statistical Package for the Social Sciences* was used to analyze the data collected. The analyses variables were subjected to include: frequencies, cross-tabulations, mean comparisons, independent t-tests, and a reliability analysis.

The first analysis run was a frequency distribution analysis. This analysis indicated that there was no data missing from the surveys. The self-identity gender category was deleted because of the low number of participants.

Cross-tabulations were run with the independent variable, GEN. For FRE and LOB, there does not appear

to be a large difference between the gender groups in that majorities in both agreed or strongly agreed with the survey statements. For TPC, WOT, and AOE, there appeared to be a difference between males and females with more females agreeing to the statements (refer to Table 1 for Cross-Tabulations and Table 2 for Mean Comparisons).

Table 1
Cross Tabulations

FRE						
GEN	SD	D	U	A	SA	Total
Male	3.4%	6.9%	13.8%	27.6%	48.3%	100.0%
Female	4.0%	2.0%	8.0%	48.0%	38.0%	100.0%

LOB						
GEN	SD	D	U	A	SA	Total
Male	3.4%	6.9%	13.8%	27.6%	48.3%	100.0%
Female	4.0%	2.0%	8.0%	48.0%	38.0%	100.0%

TPC						
GEN	SD	D	U	A	SA	Total
Male	3.4%	6.9%	13.8%	27.6%	48.3%	100.0%
Female	4.0%	2.0%	8.0%	48.0%	38.0%	100.0%

WOT						
GEN	SD	D	U	A	SA	Total
Male	3.4%	10.3%	24.1%	24.1%	37.9%	100.0%
Female	2.0%	2.0%	10.0%	54.0%	32.0%	100.0%

AOE						
GEN	SD	D	U	A	SA	Total
Male	3.4%	10.3%	24.1%	24.1%	37.9%	100.0%
Female	2.0%	2.0%	10.0%	54.0%	32.0%	100.0%

Note. (GEN)=Gender of participant; (FRE)=While considering a tattoo/piercing I think about my future employment; (LOB)= While considering a tattoo/piercing I think about the location on my body and if visible to an employer; (TPC) = While considering a tattoo/piercing I think about the design and if it would be offensive to an employer; (WOT)=While considering a tattoo/piercing I think about how a future employer may perceive me; (AOE)=While considering a tattoo/piercing, I take into consideration that I may not get hired.

Table 2

Compare Means

GEN		FRE	LOB	TPC	WOT	AOE
Male	Mean:	4.10	4.31	3.41	3.93	3.82
	SD:	1.11	0.93	1.52	1.09	1.16
	Range:	4.00	3.00	4.00	4.00	4.00
Female	Mean:	4.14	4.38	3.82	4.16	4.12
	SD:	0.95	0.73	1.22	0.87	0.82
	Range:	4.00	4.00	4.00	4.00	4.00

Note. (GEN)=Gender; (FRE)=While considering a tattoo/piercing I think about my future employment; (LOB)= While considering a tattoo/piercing I think about the location on my body and if visible to an employer; (TPC) = While considering a tattoo/piercing I think about the design and if it would be offensive to an employer; (WOT)=While considering a tattoo/piercing I think about how a future employer may perceive me; (AOE)=While considering a tattoo/piercing, I take into consideration that I may not get hired.

An independent samples t-test was run to compare mean scores for males and females. There was one significant mean difference in variable AOE (refer to Table 3).

Table 3

Independent T-tests

Variable	Males	Females	t	df	Sig.
FRE	4.10 (1.11)	4.14 (0.95)	-0.16	77	0.186
LOT	4.31 (0.93)	4.38 (0.73)	-0/37	77	0.086
TPC	3.41 (1.52)	3.82 (1.22)	-1.30	77	0.090
WOT	3.93 (1.09)	4.16 (0.86)	-1.03	77	0.137
AOE	3.82 (1.17)	4.12 (0.82)	-1.19	44	*0.005

Note. (FRE)=While considering a tattoo/piercing I think about my future employment; (LOB)= While considering a tattoo/piercing I think about the location on my body and if visible to an employer; (TPC) = While considering a tattoo/piercing I think about the design and if it would be offensive to an employer; (WOT)=While considering a tattoo/piercing I think about how a future employer may perceive me; (AOE)=While considering a tattoo/piercing, I take into consideration that I may not get hired. *significant @ $p < 0.01$, two tailed. Standard deviations appear in parentheses below means.

A reliability analysis was run to indicate if the variables were a reliable index to measure the major concept: college students' attitudes on the affects of VBM on future employment. Cronbach's Alpha is a measure of reliability and was 0.819. This value indicated that the survey items were a reliable measure of the major concept. Qualitative comments were received at the end of numerous surveys. These comments will be analyzed and determined in the Discussion section.

Discussion

Overall, results supported the hypothesis that female college students would consider VBM in relation to future employment more than males; a significant mean difference was found. This finding was supported in the literature (Horne et al., 2007). Each dependent variable will be discussed in terms of how the results compared to the literature and /or through the theoretical framework. Thereafter, limitations to the study, implications for practitioners, implications for future research, and concluding remarks will be discussed.

Results showed that a majority of respondents agreed that VBM impact future employment which is supported in the literature (Kramer, 2006). The results showed that females considered VBM more than males in terms of future employment. This finding specifically relates to the literature which states that female participants were viewed as objective targets compared to males (Horne et al., 2007). According to Kramer, employers had negative perceptions or reactions to their employees with body modifications (2006). The next survey statement: *while considering a tattoo/piercing I think about the design and if it would be offensive to an employer*; the majority of respondents agreed and this connection was supported in literature. According to Firmin et al., Christian college students that were interviewed stated that their tattoos were not visible unless articles of clothing were removed (2008). For the survey

statement: *while considering a tattoo/piercing I think about the location on my body and if visible to an employer*, the majority of respondents agreed; this finding is supported in the literature which states that visibility and locations are crucial in terms of judgment to society (Resenhoeft et al., 2008). For the survey statement: *while considering a tattoo/piercing I think about my future employment*, both males and females agreed. This finding is supported in the literature which states that males and females consider VBM while thinking about future employment (Horne et al., 2007).

Regarding the survey statement: *while considering a tattoo/piercing I take into consideration that I may not get hired*, roughly half of female participants agreed; a greater number than the males. Over half of females agreed that when considering VBM they consider that they may not get hired, whereas only 24% of males agree that while they consider a VBM, they take into account the fact that they may not get hired. This statement relates back to the literature which states that female participants were viewed as objective targets by employers, compared to males; therefore females are more concerned regarding employer perspectives and the connection that those perspectives have on getting hired (Horne et al., 2007).

Two participants offered qualitative comments which relate to the hypothesis. One theme that was found in the comments was that female participants consider VBM and the location on their body when considering future employment. The female participants both commented that they preferably got tattoos/piercings in places that can be hidden when wearing business attire which relates back to the literature that states that females are viewed negatively with VBM (Resenhoeft et al., 2008). Another theme that was found was participants stating that they simply did not consider future employment, or employer's perceptions, when getting VBM due to self expression and forms of identifying themselves which relates back to the literature

stating that VBM are forms of self expression and identity (Horne et al., 2007).

Limitations

This study used a small and non-random sample and therefore it was difficult to generalize to a larger student population. There also were inequitable numbers of male to female students which made for a skewed sample.

Implications for Practitioners

The results showed that female college students consider their VBM more than males when thinking about future employment. Career counselors in college can increase awareness to all students that given the uncertain economy it is important to take into account VBM and the possible negative consequences from the perspective of employers. Male college students in particular need to have their awareness increased.

Implications for Future Research

Future researchers should use to a larger, more diverse, and random sample in order to be able to generalize to a larger population of female and male college students regarding VBM and future employment. To gain more knowledge on the subject matter, employers and job counselors should be surveyed to gather their perspectives on VBM and future employment. Conducting qualitative interviews with a larger population of graduating college students and their potential employers may also be helpful in understanding perceptions of VBM.

Conclusion

The results of this study have added to previous research which supports the connection between VBM and future employment (Firmin et al., 2008; Resenhoeft et

al., 2008; Horne et al., 2007; Kramer, 2006). As previous research has suggested, it is important for college career specialists to engage students in the conversation about their perceptions on visible body modifications (VBM) in relation to future employment. Given the uncertain economy, students need to be empowered to make the best decisions for themselves which includes how VBM may influence obtaining employment.

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A Sustainability Comparison Between Biodegradable and Petroleum-based Plastics

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Keywords: Biodegradable plastic, biodegradability

Abstract

Using corn and other more sustainable methods of producing plastic has been around for some time, but the polymer was too expensive for broad commercial applications until 1989.¹ Hughes Hybrid, a seed company in southern Wisconsin and northern Illinois, was handing out pens produced from corn over a decade ago. They were flexible and reliable, but simply a novelty. The next step was to manufacture a product out of a renewable resource that is far from a novelty: a package that has the potential to biodegrade and be mass produced. With the sudden push for environmentally friendly packaging, this has been implemented on a small scale nationwide. Companies like NatureWorks have narrowed their production line to being derived solely from corn and other renewable resources, still being able to contend with other, petroleum-based manufacturers in the plastic packaging industry. Plastic packaging, due to the fact that it is made from crude oil, has been the target of many environmental issues. Are biodegradable plastics a viable option to counter the effects of petroleum-based plastics on the environment?

Introduction

Two years ago San Francisco became the first city in the United States to ban plastic grocery bags. The options proposed in San Francisco included biodegradable plastics

and bags made from recycled paper. Since the bags were so light, they caught wind easily, finding their way into sewers and streams. Action has been taken across the globe to reduce the use of these non-biodegradable plastics. In South Africa plastic bags are referred to as their “national flower” (Cunningham, 2007), and a minimum thickness of the bag was instated, which led to the charging of bags and promoted reuse. Taiwan initiated a rule in 2003 that restaurants and supermarkets must charge customers for plastic bags and utensils. Bangladesh has recognized plastic bags as a cause of flooding and consequently banned them.

Plastic grocery bags are not the only area in manufacturing that is using biodegradable plastics for production. Polylactide (PLA), a plastic designed to biodegrade, is being used for cups and bottles. PLA can be produced from many plant starches, corn and sugarcane being the most prevalent. In 2005, Wal-Mart partnered with NatureWorks, introducing their corn-based plastic (PLA) in produce packaging throughout stores in the United States.

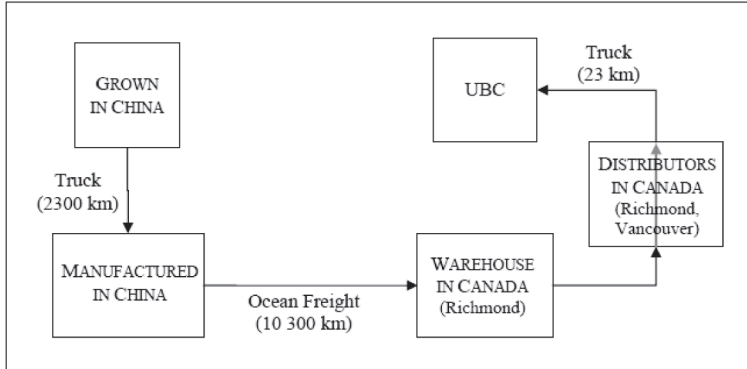
Underlying issues on the environmental friendliness of biodegradable plastics were not unearthed until a few years ago. Shifting attention from a primary energy source—oil used in the production of plastic—to a secondary one—oil used in harvesting of corn—easily confuses consumers. By advertising biodegradability, companies avoid secondary and concentrate on primary energy sources, like oil used in the production of plastic. Previous literature that was reviewed used Life Cycle Assessment (LCA) to determine overall energy use of biodegradable plastics compared to conventional plastics. “The major stages in an LCA study are raw material acquisition, materials manufacture, production, use/reuse/maintenance, and waste management.”² Examinations of these studies look to verify if biodegradable plastics are a healthy alternative to conventional plastics.

Literature Review

A study performed by Chaffee & Yaros (2007) compared three options for grocery bags. Addressed was the newly formed opinion on the environmental impact of single-use plastic grocery bags. When comparing the typical polyethylene (PE) grocery bag to grocery bags made with compostable plastic resins—traditional plastic grocery bags use less energy in terms of fuels for manufacturing, less oil, and less potable water, and emit fewer global warming gases, less acid rain emissions, and less solid wastes (Chaffee & Yaros, 2007). The findings of Chaffee & Yaros (2007) indicate that biodegradable plastics are neither a clean alternative to petroleum-based, traditional plastics nor to grocery bags made from recycled paper. The debate of the environmental friendliness of single-use grocery bags has risen once again by efforts to ban traditional plastic bags. These efforts question if there are any environmental trade-offs in switching from conventional plastic bags to bags made from biodegradable material.

Lee (2009) broke energy use into agriculture, manufacturing, and transportation of products from two companies: Biodegradable Food Service (BFS) and Biodegradable Solutions International (BSI). It was proved that transportation costs were one of the major secondary energy source.

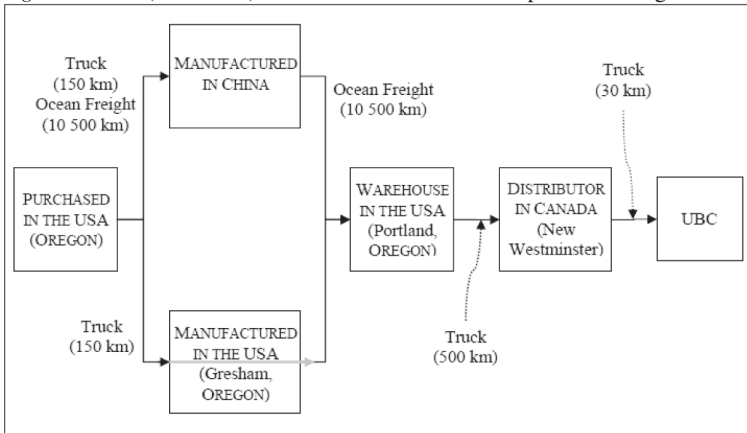
Figure 1: BSI Process Location and Transportation Diagram



Source: Lee, Sin. Nov. 2009

In Figure 1 above, distance was tracked from production of corn, through the manufacturing, and up to the distribution of the biodegradable plastic. At over 10,000 km, ocean freight between manufacturing in China and the warehousing in Canada consumes the most energy.

Figure 2: BFS (Taterware) Process Location and Transportation Diagram



Source: Lee, Sin. Nov. 2009

In Figure 2, potato wash, which is the substitute for corn in biodegradable plastics, is first purchased by

Biodegradable Food Service (BFS) in the United States, and then either freighted for manufacturing in China or driven 150 km for manufacturing in Oregon. Twenty-five percent of this wash is sent to Gresham, Oregon for manufacturing; the remaining 75% is sent to China (Lee, 2009). From Figure 2 above, 21,000 km in ocean freight is required for manufacturing in China.

Franklin Associates (2008) narrowed their research to that of milk containers and the energy, postconsumer solid waste, and greenhouse gas emissions involved in the process. Through this analysis, they evaluated 10,000 half-gallon milk containers consisting of glass, paper, biodegradable plastic, and conventional plastic. Conventional plastics, as milk containers, performed more efficiently than biodegradable plastics. High-density polyethylene (HDPE), a conventional plastic identified by Franklin Associates (2008), is used for traditional milk bottles. The total energy for the HDPE bottle system is considered significantly less than the PLA bottle system (Franklin Associates, 2008). It should be noted that if the energy of material resource for corn were not included in the PLA bottle system, the total energy would be 48.7 million Btu. However, this total is still significantly higher than the total energy of all other systems (Franklin Associates, 2008).

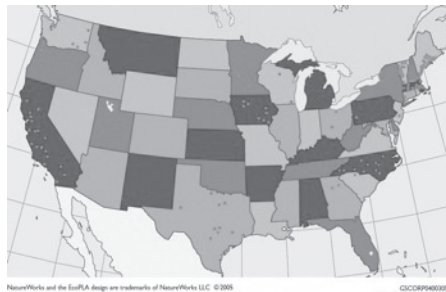
Biodegradable plastics, as a substitute for conventional plastics, have been an important step in an attempt to reduce waste sent to landfills. Kinneman (2006) examined recycling and the associated costs and benefits of reducing waste sent to landfills. A municipal curbside recycling program required households to label garbage bags. Identifying biodegradable plastics for sorting could be implemented through this collection system. By giving the consumer the option to sort biodegradable plastics from other, non-biodegradable plastics, issues with PLA products finding their way into the waste stream could be avoided.

With the verification that conventional plastics

perform more environmentally friendly than biodegradable plastics in both studies of Chaffee & Yaros and Franklin Associates, it is obvious that biodegradable plastics are not the immediate answer to the perceived landfill problem traditional, non-biodegradable plastics started.

The American Society for Testing and Materials (ASTM) has a standard for biodegradable plastics: This specification is intended to establish the requirements for labeling of materials and products, including packaging made from plastics, as compostable in municipal and industrial composting facilities (ASTM, 2009)³. Biodegradability, then, does not define a material to have the capacity to break down along with food and yard waste in one's backyard. Even if biodegradable plastics had more efficient means of production than conventional plastics, the cost of sorting and transportation arises with the post-consumer disposal phase.

Figure 3: Industrial Composting Facilities



In Figure 3, industrial composting facility sites are shown across the United States. These facilities are being built as alternatives to landfills to meet the ASTM standard for being compostable. Western United States lacks many facilities. Economic theory suggests that the cost of new innovation is expected to be high; however, as more companies participate in industrial composting, these associated costs will fall drastically.

Adam Kramschuster, a professor at UW-Stout, earned his Ph.D. in the research and development of polymer

composites consisting of biodegradable polymers and natural fibers. After speaking to him about biodegradable plastics as a sustainable option⁴, the future does not seem so bleak. “The challenge in using food (corn and soybeans) as a feed stock for plastics pose challenges that will have to be tackled in the future as the population continues to increase,” he said. “However, the idea of taking carbon out of the atmosphere to grow plants and putting it back into the atmosphere as the plastic degrades is drastically better than taking ‘old carbon’ that has been stored in fossil fuels and introducing that into the atmosphere.”

Figure 4

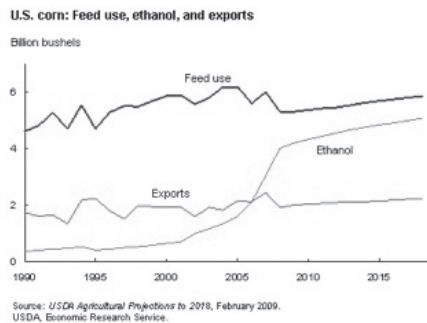


Figure 4 above, estimates corn use in the U.S. for feed use, exports, and ethanol. With the projections of corn use for fuel drastically rising in the next few years, many are skeptical about how much of our food should be going to inedible production. If the biodegradable plastics are not making it to the industrial compost facilities, it’s almost as if we are not only throwing away our food but putting mass amounts of energy into it—electricity and potable water to produce carbon dioxide emissions and solid waste.

Conclusion

Currently, biodegradable plastics are unproductive in their manufacturing and recovery processes. Transportation costs can be greatly reduced by simply reusing cloth and

plastic bags. An increase in recycling of non-biodegradable plastics is an unfailing option as well. In Canada, plastic bag recycling is encouraged through the education of municipal curbside recycling. Informing citizens on how to prepare bags to be recycled through flyers and radio advertisements can be found on their website. Companies like Advanced Environmental Recycling Technologies are a part of the push for green advertising. Through the innovation in plastic scrap recycling for wood decking, they are able to advertise their sustainable efforts with plastics by taking a closed loop approach, moving away from the straight-line approach of waste management. HilexPoly, a plastic bag producer based in South Carolina, is another leader in recycling. There, collected plastic bags are washed, ground into pellets, and used to manufacture entirely recycled bags.

Since energy use associated with biodegradable plastics is still more than that of conventional plastics, biodegradable plastics will not serve as an efficient alternative until industrial composting facilities are more widely established across the United States. Even if created from a renewable resource, biodegradable plastics will not solve economic and environmental problems if they find their way into landfills through trash cans or conventional plastic recycling programs through recycling bins. A third sorting system specific to biodegradable plastics must be employed to insure biodegradability in composting facilities. Then, the excess energy in the manufacturing of biodegradable plastics will be outweighed by the transference of carbon dioxide as the plastic biodegrades.

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The Attitudes of Male Inmates towards Recidivism

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Key Words: recidivism, jail, inmates

Abstract

The United States incarcerates more people than any other country in the world (Vacca, 2004). An existing body of research demonstrates that programs for incarcerated individuals to reduce recidivism have a positive impact (Katsiyannis, Zhang, Barrett, & Flaska, 2004). The central research question in this study was, “from the male inmate perspective, what factors contribute to reducing recidivism”? It was hypothesized that incarcerated males would agree that more programs are needed in order to help them not reoffend. The site of this nonrandom study was at a northwestern Wisconsin jail. The participants were 50 incarcerated males. Survey data was statistically analyzed using frequencies, mean comparisons, correlations, and a reliability analysis. Overall, there were a number of positive correlations among the variables with the hypothesis being supported. Cronbach’s Alpha reliability was 0.884. It would be recommended that jail program directors advocate for comprehensive pre and post release services to reduce recidivism and to tailor those services needed to each individual. Implications for future research include using a larger sample and comparing groups based on age.

Introduction

An existing body of research supports programs for

incarcerated individuals that reduce recidivism (Freudenberg, Daniels, Crum, Perkins, & Richie, 2008; Golden, Gatchel, & Cahill, 2006; Katsiyannis, Zhang, Barrett, & Flaska, 2004; Vacca, 2004). The United States incarcerates more people than any other country in the world (Vacca, 2004). This statistic alone makes the fight against recidivism all the more important. Current research showed that programs for incarcerated individuals within the jails were only somewhat successful (Katsiyannis et al., 2004). The research also showed that programs after release had a minimal impact on the success of the individuals in a positive way (Golden et al., 2006). Are the programs offered for incarcerated individuals really what they need to succeed? After the researchers reviewed current literature on recidivism, male inmates, 18 and above, were surveyed at a northwestern Wisconsin jail. They were surveyed on what they thought they needed to not reoffend.

Literature Review

The researchers examined the existing literature on what male inmate attitudes were towards the factors that contributed to their recidivism. Focusing on male inmates, the literature found was quite vast, but was not always clear and concise on what the incarcerated individual's perspective was. As a result only four relevant articles were used. All four articles (Freudenberg et al., 2008; Golden et al., 2006; Katsiyannis et al., 2004; Vacca, 2004) pointed out different variables that play a part in recidivism which were all part of the incarcerated individual's environment in and out of the correctional system. These variables included: alcohol abuse, depression, attachment issues, age of initial incarceration, educational achievement, employment status, income level, housing situation, and cultural background. There was an agreement amongst all authors that there is disconnect among correctional facility administrators on the

goal of the correctional system: punishment or rehabilitation. Each study also mentioned the high cost of incarceration and the effect it has on the development of programs to combat the rise of recidivism among incarcerated individuals (Freudenberg et al., 2008; Golden et al., 2006; Katsiyannis et al., 2004; Vacca, 2004).

Freudenberg et al. (2008) examined what happens when incarcerated individuals are released and what happens when they go home. This study also stated that the U.S. has the highest incarceration rate and that from the years of 1980 to 2002 the incarcerated population had risen over 265 percent. Four-hundred and ninety-one adolescent incarcerated males participated in the study. The participants were asked what problems they think they may have once they are released from lock up. The obstacles they cited were unemployment, proper education, poverty, increased alcohol and drug use, and finding proper housing. The males were followed up on for a minimum of three months. The research showed that after release the participants were not more likely to be employed and even less likely to be in school. Males living with peers that used drugs were more likely to use drugs themselves and were three times more likely to re-offend. The participants in the study stated that employment and education were the biggest problems they faced and the research supported this. The authors deemed this important because it showed that the participants had realistic assessments of the difficulties they would face after being released.

Golden et al. (2008) examined the effectiveness of the National Institute of Corrections (NIC) "Thinking for Change" Program. This program is comprised of 22 sessions to help probationers ease back into society. The sample included 100 male probationers of either medium-risk or high-risk as evaluated by their probation officer. This study stated that keeping people in jail is expensive and probation

is a way to rehabilitate within the community. The program was to help with interpersonal and social problem solving skills. The research showed that 62 percent of the participants graduated the program and 38 percent dropped out. The graduates of the program demonstrated lower recidivism while 75 percent of the drop outs re-offended, 50 percent of them within three months of being released and put on probation. Research showed that people who learned the skills set forth in the class were less likely to re-offend. The authors stated they wanted to examine the motivation behind the compliance and non-compliance of the individual's probation.

Katsiyannis et al. (2004) examined the background and psychosocial variables associated with recidivism among adolescent males. The study stated that recidivism has a serious effect on the economy. The author stated that one individual being incarcerated may cost on average two million dollars. This meant that even programs at a success rate of one to five percent can help the economy. They observed and interviewed 299 adolescent males in a youth rehabilitation center. The tools they used were the Adolescent Drinking Index, the Reynolds Adolescent Depression Scale, the Inventory of Parent and Peer Attachment, and the Personality Research Form. The research the authors performed gave them an idea of the variables that affect recidivism. The variables included: alcohol abuse, depression, levels of parent and peer attachment, personality traits, the age of their first incarceration, and their educational achievements. The authors stated that factors that lead to incarceration include: severity of offense, IQ, prior family arrests, family violence, parental crime, impulsivity, a lack of affectionate bonding, and delinquent siblings. Psychosocial factors include: general deviance, amorality, problems with authority, alcoholism, and distress. The research found that there was less cognitive structure for those that reoffended. Results also

showed a lowered sense of approval and support, a tendency for poor relationships, mistrust, and disengagement. Of all the variables examined, the age of the first incarceration was the single most important predictor for recidivism.

Vacca (2004) examined the role of literacy and programs that incorporated help with social skills, artistic development, and strategies for incarcerated individuals to effectively deal with their emotions. The study stated that the United States of America incarcerates more people than any other country and most are re-offenders. It stated that appropriate education would put recidivism on a decline. The research also stated that appropriate education is hindered by values and attitudes of correctional facility authority figures (security, control, punishment, and rehabilitation), facility overcrowding, and lack of funding. The research showed that inmates were more likely to participate in educational programs if there were clear opportunities to improve their capability of success. The research also explained that literacy was an issue for incarcerated individuals upon release, because to combat recidivism these men needed to be able to fill out job applications, write letters, and also keep a job. It also stated that literacy was also needed for inmates to “pass the time” by being able to read for comfort and recreational purposes. The authors stated that appropriate education was not just for teaching but promoting a positive transition into society.

Collectively, the research lacked a clear strategy to reduce recidivism but all agreed it is a significant societal problem. The research has shown a connection between the environment and the problems it can cause for the individual if proper programs are not in place to promote success after release. Common variables have been found so that better understanding of recidivism can be achieved, but solutions are at a minimum (Vacca, 2004; Freudenberg et al., 2008; Golden et al., 2006; Katsiyannis et al., 2004). More research

is needed to examine what adult male re-offenders need to successfully reenter society; the contribution of this study.

Theoretical Framework

The theoretical framework that was applied to this study was Bronfenbrenner's Family Ecology Theory (Strong, DeVault, & Cohen, 2005). The Family Ecology Theory states that as individuals develop, they acclimate themselves to their surrounding environments, which consist of four levels. These levels include: the microsystem as the immediate environment; the mesosystem as the connections between the microsystems; the exosystem as the environment that indirectly affects the person, and the macrosystem which is the cultural, laws, attitudes and beliefs that affect the United States.

The application of the Family Ecology Theory to this study would predict that each level of environment would have an effect on how that individual would cope with a situation. Another prediction would be that a lack of programs in the jail system, part of the offender's microsystem, would affect recidivism of an incarcerated individual.

Purpose Statement & Hypothesis

The purpose of this study was threefold. One was to examine the attitudes of incarcerated males and the factors that contributed to recidivism; secondly; to develop a reliable survey instrument to measure those attitudes; and thirdly; to increase awareness of how to improve programs for incarcerated males. The central research question in this study was, "from the male inmate perspective, what factors contribute to reducing recidivism?" The authors hypothesized that incarcerated males would agree that more programs are needed in order to help them not to reoffend.

Method

Participants

The site of this study was at a northwestern Wisconsin jail. The participants were 50 incarcerated males. Participants were between the ages of 14-52 years of age and had their first incarceration anywhere between the ages of 10-44 years old. 20 of the participants had been incarcerated 1-5 times. Also, participants had been incarcerated anywhere between 6-35 times throughout their life. 40 participants had either a high school diploma or equivalency and ten did not.

Research Design

The purpose of survey research is to be able to generalize from a sample of males to a similar larger population so that some inferences can be made about recidivism and the attitudes of male inmates (Babbie, 1990). This particular study focused on what male inmate attitudes were towards the factors that contributed to their recidivism. The survey design type can be described as a cross-sectional study design in that it was used to gather the attitudes of the incarcerated males at one point in time. The form of data collection was self-administered questionnaires that were distributed by the program director of the jail. The rationale for using this method was that it was the most efficient method to gather the data from the jail as well as obeying the laws of the county, state, and federal government. The population for this study was Wisconsin jail inmates and the sample population was male inmates in one northwestern Wisconsin jail. The sample design was purposive and non-random. The ethical protection of human subjects was provided by completing the Human Subjects Institutional Review Board (IRB) training; this study has been approved by the IRB.

Data Collection Instrument

In order to identify the attitudes of incarcerated males towards recidivism a survey was designed. The survey included a brief description of the study with an implied consent, definition of any terms not commonly known, risks and benefits, time commitment, confidentiality, voluntary participation, and contact information for counseling services and the supervisor as well as instructions for completing the survey.

The survey consisted of five demographic questions relating to gender, age, age of first incarceration, number of times incarcerated, and graduation from high school or having obtained a GED. Participants were given fourteen closed-ended statements based on a 5-point Likert scale which measured the intensity of the respondents' attitudes ranging from one (strongly disagree) to five (strongly agree). The survey statements were informed by literature and theory.

The survey instrument had both face validity and content validity. Because the questions and concepts addressed in the survey were literature-inspired, it was determined that they clearly connected with what is needed to help prevent recidivism. The questions addressed a broad range of services or programs that are needed to reduce the likelihood to re-offend.

Procedure

The survey began with an email to the jail director stating the purpose for the study and asking for permission to survey the inmates. Data for the study was then collected when the researchers received permission to enter the jail under the director's supervision on November 12, 2009.

Data Analysis Plan

The data was first cleaned and checked for any

missing data. The cleaned surveys were then coded using acronyms for each variable. The first five questions on the survey were demographic variables: gender, age, age of first incarceration, number of times incarcerated and graduating from high school or having a GED. Each survey statement was a dependent variable and given an acronym. The survey began with the statement: In order to not re-offend, I am in need of the following: A high school diploma/GED (*GED*); Education beyond a high school diploma/GED (*COL*); Job training (*EMP*); Problem-solving skills (*PSS*); Services to help me cope with stress (*STR*); Mental health services (*MHS*); A support system (*SUP*); Health insurance (*HEL*); Alcohol abuse services (*ALA*); Other drug abuse services (*DRG*); Parenting skills classes (*PAR*); Relationship-building skills (*RBS*); Safe housing (*HOS*); and A different environment to return to after release (*ENV*).

The data analyzing tool used was the computer program called the *Statistical Package for the Social Sciences* (SPSS). The data analysis included: frequencies, a reliability analysis, correlations, and mean comparisons. A Cronbach's Alpha reliability analysis was also conducted.

Results

All variables were subjected to frequency distribution analysis. Results indicated that there was no missing data. For the variables (*GED*) and (*COL*) most respondents disagreed or strongly disagreed that they needed a high school diploma/GED or more education beyond high school to not re-offend. For the variables (*EMP*) and (*PSS*) most respondents agreed or strongly agreed that they needed job training and problem solving skills in order to not re-offend. For the variables (*STR*) and (*MHS*) most respondents agreed or strongly agreed that they needed services to cope with stress and mental health services in order to not re-offend. For the variables (*SUP*) and (*HEL*) most respondents agreed or strongly agreed that they needed some sort of support

system or health insurance in order to not re-offend. For the variables (*ALA*) and (*DRG*) most respondents agreed or strongly agreed that they needed alcohol abuse services or other drug abuse services in order to not re-offend. For the variable (*PAR*) respondents were mixed on the idea of needed parenting skills in order to not re-offend. For the variable (*RBS*) most respondents agreed or strongly agreed that they needed relationship building skills in order to not re-offend. For the variables (*HOS*) and (*ENV*) most respondents agreed or strongly agreed that they needed safe housing and a different environment to return to after release in order to not re-offend. There were no significant mean comparisons, but the table was included for research purposes. (refer to Table 1 for Frequency Distribution Analysis and Table 2 for Mean Comparisons).

Table 1

Frequency Distribution

Variable	SD	D	U	A	SA	Total
GED	24.0%	12.0%	12.0%	18.0%	34.0%	100.0%
COL	14.0%	8.0%	20.0%	28.0%	30.0%	100.0%
EMP	12.0%	10.0%	16.0%	30.0%	32.0%	100.0%
PSS	14.0%	12.0%	14.0%	30.0%	30.0%	100.0%
STR	12.0%	8.0%	10.0%	32.0%	38.0%	100.0%
MHS	24.0%	12.0%	14.0%	26.0%	24.0%	100.0%
SUP	14.0%	8.0%	14.0%	26.0%	38.0%	100.0%
HEL	16.0%	12.0%	18.0%	24.0%	30.0%	100.0%
ALA	26.0%	6.0%	18.0%	24.0%	26.0%	100.0%
DRG	28.0%	8.0%	8.0%	30.0%	26.0%	100.0%
PAR	28.0%	8.0%	22.0%	22.0%	20.0%	100.0%
RBS	20.0%	12.0%	10.0%	30.0%	28.0%	100.0%
HOS	22.0%	8.0%	14.0%	20.0%	36.0%	100.0%
ENV	16.0%	6.0%	16.0%	18.0%	44.0%	100.0%

Note. (GED)= Need a high school diploma or equivalence;(COL)= Need education beyond high school or equivalence;(EMP)= Need job training;(PSS)= Need problem solving skills;(STR)= Need services to help cope with stress;(MHS)= Need mental health services;(SUP)= Need a support system;(HEL)= Need health insurance;(ALA)= Need alcohol abuse services;(DRG) = Need other drug abuse services;(PAR)= Need parenting skills classes;(RBS)= Need relationship-building skills;(HOS)= Need safe housing;(ENV)= Need a different environment to return to after release.

Table 2
Means Comparisons

	GED	COL	EMP	PSS	STR	MHS	SUP
Mean	3.26	3.52	3.60	3.50	3.76	3.14	3.66
SD	1.61	1.37	1.35	1.40	1.36	1.52	1.42
Range	4.00	4.00	4.00	4.00	4.00	4.00	4.00
	HEL	ALA	DRG	PAR	RBS	HOS	ENV
Mean	3.40	3.18	3.18	2.98	3.34	3.40	3.68
SD	1.44	1.54	1.59	1.50	1.50	1.57	1.49
Range	4.00	4.00	4.00	4.00	4.00	4.00	4.00

Note. (GED)= Need a high school diploma or equivalence;(COL)= Need education beyond high school or equivalence;(EMP)= Need job training;(PSS)= Need problem solving skills;(STR)= Need services to help cope with stress;(MHS)= Need mental health services;(SUP)= Need a support system. (HEL)= Need health insurance;(ALA)= Need alcohol abuse services;(DRG) = Need other drug abuse services;(PAR)= Need parenting skills classes;(RBS)= Need relationship-building skills;(HOS)= Need safe housing;(ENV)= Need a different environment to return to after release.

Correlations were run on all variables. A total of 60 significant correlations were found between variables. There were 25 strong correlations at a $p < 0.01$ (two-tailed): (COL) and (EMP) as well as (EMP) and (PSS) were strongly correlated. (PSS) was strongly correlated with (STR), (MHS), (SUP), (DRG), (PAR), (RBS), and (HOS). (STR) was strongly correlated with (MHS), (SUP), (HOS), and (ENV). (MHS) was strongly correlated with (SUP), (HOS), and (ENV). (SUP) had a strong correlation with (HOS) and (ENV). (ALA) had a strong correlation with (DRG) and (RBS). (DRG) was strongly correlated with (PAR) and (RBS). (PAR) and (RBS) as well as (RBS) and (HOS) were strongly correlated. There was also a strong correlation between (HOS) and (ENV).

There were 13 medium correlations at a $p < 0.01$ (two-tailed): (GED) and (EMP), (COL) and (PSS), (PSS) with (ALA), (STR) and (RBS), (MHS) and (RBS), (SUP) and (RBS) as well. (ALA) was medium correlated with (PAR), (HOS), and (ENV). (DRG) had a medium correlation with

(HOS) and (ENV). (PAR) had a medium correlation with (HOS). There was also a medium correlation between (RBS) and (ENV).

There were 17 medium correlations at a $p < 0.05$ (two-tailed): (GED) had a medium correlation with (COL). (COL) had a medium correlation with (MHS), (ALA), (DRG), (PAR), (RBS), and (ENV). (EMP) had a medium correlation with (MHS). (PSS) had a medium correlation with (ENV). (STR) had a medium correlation (ALA) and (DRG). (MHS) had a medium correlation with (HEL), (ALA), and (PAR). (SUP) had a medium correlation with (HEL) and (DRG). There was also a medium correlation between (DRG) and (ENV).

There were 5 weak correlations at a $p < 0.05$ (two-tailed). (GED) had a weak correlation with (PSS). (COL) had a weak correlation with (SUP) and (HOS). (MHS) had a weak correlation with (DRG). There was also a weak correlation between (SUP) and (ALA) (refer to tables 3 for correlations).

Table 3

Pearson Correlation Matrix

Variable	GED	COL	EMP	PSS	STR	MHR	SUP
GED							
COL	.324*						
EMP	.422**	.585**					
PSS	.293*	.370**	.515**				
STR				.619**			
MHS		.305*	.305*	.558**	.693**		
SUP		.291*		.577**	.777**	.709**	
HEL						.345*	.326*
ALA		.358*		.437**	.330*	.352*	.288*
DRG		.309*		.577**	.310*	.291*	.359*
PAR		.331*		.507**		.312*	
RBS		.347*		.545**	.478**	.414**	.407**
HOS		.297*		.590**	.586**	.527**	.625**
ENV		.332*		.302*	.574**	.514**	.631**

Table 3.2

Pearson Correlation Matrix

Variable	HEL	ALA	DRG	PAR	RBS	HOS	ENV
HEL						.345*	.326*
ALA		.358*		.437**	.330*	.352*	.288*
DRG		.309*		.577**	.310*	.291*	.359*
PAR		.331*		.507**		.312*	
RBS		.347*		.545**	.478**	.414**	.407**
HOS		.297*		.590**	.586**	.527**	.625**
ENV		.332*		.302*	.574**	.514**	.631**

Note. (GED)= Need a high school diploma or equivalence;(COL)= Need education beyond high school or equivalence;(EMP)= Need job training;(PSS)= Need problem solving skills;(STR)= Need services to help cope with stress;(MHS)= Need mental health services;(SUP)= Need a support system;(HEL)= Need health insurance;(ALA)= Need alcohol abuse services;(DRG) = Need other drug abuse services;(PAR)= Need parenting skills classes;(RBS)= Need relationship-building skills;(HOS)= Need safe housing;(ENV)= Need a different environment to return to after release -N=50; **Correlation is significant at the $p < 0.01$ (two-tailed); *Correlation is significant at the $p < 0.05$ (two-tailed).

A reliability analysis was run to indicate if the 14 variables (*GED*, *COL*, *EMP*, *PSS*, *STR*, *MHS*, *SUP*, *HEL*, *ALA*, *DRG*, *PAR*, *RBS*, *HOS*, & *ENV*) were a reliable index to measure the major concept: Male inmate attitudes towards recidivism. Cronbach's Alpha is a measure of reliability and in this analysis was 0.884. This value indicated that the survey questions were a reliable measure of the major concept.

Discussion

Overall, results supported the hypothesis that male inmates need services in order to reduce recidivism and not reoffend. Significant positive correlations were found; these correlations were supported in the literature (Vacca 2004, Katsiyannis et al., 2004, Freudenberg et al., 2008, & Golden et al., 2008). Each dependent variable will be discussed in terms of how the results were supported in the literature and/or through the Family Ecology theoretical framework (Strong et al., 2005). Thereafter, limitations to the study,

implications for practitioners, implications for future research, and concluding remarks will be discussed.

Results showed that respondents were mixed that they would need a high school diploma or equivalency in order to not re-offend which was supported by the literature (Vacca, 2004). These results may be skewed because some respondents may have already had a high school diploma or equivalency. More respondents agreed that they would need even more education than a high school diploma or equivalency in order to stay out of jail. According to Vacca, education promotes a healthy transition back into society. There was a significant positive correlation between needing higher education and needing job training in order to not re-offend; these results are also supported by Vacca. Golden et al. stated that inmates needed problem solving skills in order to not re-offend (2008). The following results supported this literature. For the survey statement of an inmate needing problem solving skills in order to not re-offend a positive strong significant correlation was found between many of the other variables. The variables included needing services to help cope with stress, needing mental health services, needing a support system, needing alcohol abuse services, needing other drug abuse services, needing parenting skills classes, needing relationship building skills, and needing safe housing. Golden et al. did not describe all of these variables in their literature in correlation to problem solving, but it does show the impact that knowing how to solve problems may have a significant impact on recidivism. A majority of respondents agreed that they needed services to help cope with stress in order to not re-offend which is supported in the literature. Katsiyannis et al. explained that distress had a role in re-offending (2004). A strong positive correlation was found between needing services to help cope with stress and respondents saying they needed mental health services, a support system, safe housing, and a different environment to

return to after release. The literature did not cite environment as a problem with stress (Katsiyannis et al., 2004). Results indicated that a majority of respondents needed health insurance in order to not re-offend. Although this was not supported in the literature, this could be supported by the Family Ecology Theory (Strong et al., 2005) in that our larger society does not provide universal coverage for all and those that may struggle with employment, such as offenders, may often not be covered. Half of respondents agreed they needed alcohol abuse services in order to not re-offend and over half of respondents agreed they needed other drug abuse and treatment services. This supported the literature of Freudenberg et al. whose research indicated that inmates were more likely to re-offend when they had a problem with drugs and alcohol (2008). There was also a strong significant positive correlation between inmates needing alcohol abuse services and needing other drug abuse services. Interestingly, respondents who said they needed alcohol abuse services also had a strong positive correlation with needing relationship building skills which is supported by Katsiyannis et al. stating that having a problem with alcohol affected their parent and peer attachment as well as had a negative effect on bonding affectionately (2004). Needing other drug abuse services had a strong positive correlation with needing relationship building skills as well as needing parenting skills; this is also supported by Katsiyannis. Strangely, the statement about needing parenting skills in order to not re-offend had the most varied responses. These results could be explained by the Family Ecology Theory (Strong et al., 2005) that messages originating in the larger culture such as the media, may be that people need to be able to handle their children; no literature covered this topic. Results also indicated that there was a significant strong correlation between respondents needing relationship building skills and safe housing to not re-offend. The Family Ecology Theory

(Strong et al., 2005) could explain that lack of relationship skills within the respondent's immediate interactions in their home, such as violence, could lead them to think it would be unsafe. Respondents who replied that they needed safe housing in order to not re-offend had a significant strong positive correlation with inmates who said they needed a different environment to return to after release. These results supported the literature that inmates who return to the same environment upon release are more likely to re-offend (Freudenberg et al., 2008). The number of inmates who agreed they needed a different environment to return to after release had the highest frequency of agreement amongst of all the variables which may indicate that these inmates have a more realistic assessment of the problems they will face when they are released.

Limitations

This study used a small and nonrandom sample and therefore unable to generalize and compare to the larger population of incarcerated males.

Implications for Practitioners

The results show that there is a need for inmates to receive services in jail and upon release to reduce recidivism. The incarcerated males indicated that the environment they return to upon release needs to be changed. Returning to the environment from before incarceration is difficult when trying to transition positively back into society. Other areas that the inmates need are more consistent drug and alcohol abuse services, programs that promote good mental health, and some sort of external or internal support system. Inmates that need and want better problem solving skills have also shown to need help in many of the variables listed above. A focus on the need of better problem solving techniques and strategies as well as individualized plans of relocation

upon release could be a significant step in the right direction. Cognitive-behavioral programming could be administered by jail directors and counselors within the jail systems.

Implications for Future Research

It is recommended that the next step of research be to use a larger, and a more diverse sample to be able to generalize to male inmates across the country. If this study were to be replicated, comparing variables with the age of first incarceration, number of times incarcerated, and having a high school diploma or education beyond high school would help to see if those groups have any implication of a higher re-offending rate. Only males were surveyed so extending this to females would also, possibly yield some different results according to gender.

Conclusion

As a result of this study, it is our hope that the rehabilitation system and government will recognize the need for services to help reduce recidivism within the male population of inmates. It is clear that help is needed for inmates to learn enhanced problem solving skills as well as ways to combat physical dependencies, cognitive and mental health issues, problems with employment, family members, and their everyday environment upon release. Inmates understand they need help with these issues. It is now time for the jail system to realize this and give these individuals the help they so desperately want, need, and deserve. When you change one offender's life course, you can be changing the next generation.

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Active Metal Brazing and Characterization of Silicon Nitride-to-Metal Joints

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Keywords: joining, silicon nitride, Inconel, electron microscopy, microhardness

Abstract

Active metal brazing of Inconel and titanium to turbine grade silicon nitride, widely acknowledged to be one of the most difficult ceramics to join to metals, was demonstrated for NASA's Subsonic Rotary Wing project. A titanium-containing active braze, Cu-ABA (brazing temperature ~1297 K) was used in foil form together with judiciously arranged interlayers of Ni, W, Mo, Ta, Cu, and Kovar to manage residual stresses in joints. The joints were vacuum brazed and examined for microstructure, composition, and microhardness using optical microscopy, scanning electron microscopy, energy dispersive spectroscopy, and microhardness testing. Interlayers of Ta and W; Ni and W; Kovar and W; and Ni, W, Ni led to sound joints of Si_3N_4 with Inconel-625 and Ti; however, micro-cracking occurred within Si_3N_4 in some systems without loss of joint integrity. The formation of interfacial reaction layers enriched in Ti and Si (possibly a titanium silicide phase) suggested chemical reaction-induced bonding. Self-joined Si_3N_4 displayed the best joint characteristics.

Introduction

During 2009 summer, over a ten-week period, research on joining of silicon nitride (Si_3N_4) to metals was

carried out in the Ceramics Branch at the NASA Glenn Research Center at Cleveland, OH. The research was done with support from Lewis' Educational and Research Collaborative Internship Program (LERCIP). This paper presents the objectives and the main findings of the research project.

The research focused on joining of silicon nitride to titanium metal and Inconel-625¹, a nickel-base superalloy used in turbine engines, as a part of the joining subtask for NASA's Subsonic Rotary Wing project. Silicon nitride is a light-weight ceramic with excellent high-temperature strength, creep-resistance, low thermal expansion, and excellent resistance to thermal shock, wear, and oxidation. This ceramic material is currently used in reciprocating engine components, turbochargers, auxiliary power unit components for aircraft, bearings, and metal cutting tools.

There is interest in using silicon nitride in turbine components of the next-generation turbo-shaft engines because it can be used without the need for extensive cooling that is required when using metallic parts. This is projected to significantly raise engine efficiency and performance. Additionally, Si_3N_4 components may be easier to fabricate than silicon carbide fiber-reinforced silicon carbide matrix composites (another contender for such applications), because of the inherent complexity in weaving cooling channels and sharp edges using the SiC fibers. In an ongoing research effort at NASA Glenn, joining and integration of Si_3N_4 ceramics with metallic, ceramic, and composite materials using braze interlayers with the liquidus temperature in the range 1023-1513 K is being investigated. One way to integrate Si_3N_4 to metallic parts is by making the entire turbine or rotor out of ceramic instead of the individual blades, and inserting compliant

1. Inconel-625 is a product of Inco Specialty Metals, and has a nominal composition (in wt%) of 58Ni-21.5Cr-9Mo-5Fe-1Co-0.5Si-0.5Mn-0.4Al-0.4Ti -3.7% (Nb, Ta).

layers into the slot. These rotors have to be connected to metal rods or shafts. This is where the joining of Si_3N_4 to high-temperature metals and alloys comes in.

Because of its brittle nature, silicon nitride, like other ceramics, is less amenable to shaping via machining and conventional manufacturing techniques. As a result, robust joining techniques that are capable of integrating geometrically simpler silicon nitride parts into complex components play a critical enabling role. Additionally, in advanced technology applications such as turbine rotors, silicon nitride needs to be integrated with other types of materials such as metals and alloys. Thus, one key aspect of utilization of silicon nitride is its joining response to diverse materials.

Silicon nitride is acknowledged to be one of the most difficult ceramics to join to metallic materials (Suganuma et al (1988)) in spite of its useful properties. This difficulty arises mainly from the relatively small coefficient of thermal expansion (CTE) of silicon nitride ($\sim 3 \times 10^{-6} \text{ K}^{-1}$), even compared with other engineering ceramics. A structural alloy such as steel (CTE: $\sim 14 \times 10^{-6} \text{ K}^{-1}$) and high-temperature alloys such as Inconel (CTE: $\sim 16 \times 10^{-6} \text{ K}^{-1}$) have appreciably larger CTE which causes large residual stresses during cooling from the joining temperature and often lead to the fracture of the ceramic. Being extremely brittle, ceramics are less forgiving than metals which fail more gracefully than ceramics. Among prominent applications of Si_3N_4 -to-metal joints, turbo-charger rotors with Si_3N_4 blades joined to a steel shaft with laminated interlayers via active metal brazing is probably the most well-known product. It has a soft metal/low expansion and hard metal/soft metal interlayer structure (e.g., laminate interlayer of Fe/W). However, the total thickness of joints that utilize interlayers is rather large; for example, in the turbo charger rotor, the total thickness of

interlayers is 2 mm.

Among the filler metals that have been used to join Si_3N_4 ceramics (Brochu et al (2004); Gopal et al (2001); Hadian and Drew (1996); Liu et al (2006); Loehman et al (1990); Peteves et al (1996); Sukanuma et al (1988); Zhang et al (2008)), Ag-Cu eutectic alloys containing Ti have been most widely used. Other notable fillers include Ag-Cu-In and Ag-Cu-Sn containing Ti. Besides Ti, active elements such as Hf, Zr, Nb and Ta also have been evaluated for joining Si_3N_4 . In addition, active brazes such as Pd-Ni-Ti, Au-Pd-Ti, and Cu-Pt-Ti/Nb as well as non-reactive brazes Pd-Ni and Au-Pd-Ni in conjunction with premetallized Si_3N_4 also have been used. Chromium has been used as an active metal in Ni-Pd and Ni-Si eutectic braze alloys. Many other brazes have been used to join Si_3N_4 ceramics. The Ag-Cu-Ti fillers are known to produce the highest levels of joint integrity and are most commonly employed to join silicon nitride ceramics. There also is interest in evaluating brazes with melting points higher than that of the Ag-Cu-Ti fillers to join Si_3N_4 .

In this study, an active braze alloy (ABA), called Cu-ABA, with liquidus temperature ($T_L \sim 1297$ K) higher than that of commonly used Ag-Cu eutectic brazes containing Ti, was evaluated. In particular, joints were created using vacuum brazing, and joint microstructure, composition, and microhardness at room temperature were evaluated with the help of optical microscopy (OM), scanning electron microscopy (SEM), energy dispersive spectroscopy (EDS), and Knoop microhardness testing. The research outcomes were included in the Subsonic Rotary Wing (SRW) project report, and shall be utilized in developing recommendations for continued joining research on Si_3N_4 ceramics.

Experimental Procedure

Silicon nitride containing 4 wt% Y_2O_3 as a sintering aid was used for joining. The material, designated as NT-154, was obtained from St. Gobain Ceramics. Silicon nitride was brazed to silicon nitride and metallic substrates using a commercial Cu-Si-Al-Ti braze alloy, Cu-ABA (from Morgan Advanced Ceramics, Hayward, CA). The alloy has a nominal composition (in weight %) of 92.75Cu-3Si-2Al-2.25Ti, and with the solidus and liquidus temperatures of $T_s \sim 1231$ K and $T_L \sim 1297$ K, respectively. Cu-ABA has high ductility (42%) and was obtained in foil form (thickness ~ 50 μm). The elastic modulus, yield strength and tensile strength of Cu-ABA are 96 GPa, 278 MPa, and 520 MPa, respectively, and its coefficient of thermal expansion (CTE) is $19.5 \times 10^{-6}/K$.

For multilayer joints with Inconel-625, an amorphous braze alloy MBF-20 (Ni-Cr-B-Si) from Honeywell, Inc., was used in combination with Cu-ABA (with MBF-20 contacting the Inconel and Cu-ABA contacting the Si_3N_4 in the joint). The superalloy, Inconel 625 was obtained from Inco Specialty Metals, and had a nominal composition (in wt%) of 58Ni-21.5Cr-9Mo-5Fe-1Co-0.5Si-0.5Mn-0.4Al-0.4Ti (with the remaining 3.7% of the composition consisting of Nb and Ta). Commercially pure titanium metal substrates were obtained from Ti Metal Inc., MO. In order to create multilayer joints, single or multiple layers of Ni, W, Mo, Ta, and Cu obtained from GoodFellow, MA, were used. Selected physical and mechanical properties of these interlayer materials are shown in Table 1. A total of 26 separate joints were created using various combinations of substrates and interlayer materials.

The substrates and braze foils were sliced into 2.54 cm x 1.25 cm x 0.25 cm pieces using either diamond saw (SN) or ceramic saw (Inconel and Ti). All materials were ultrasonically cleaned in acetone for 15 min. Two braze foils

were sandwiched between the substrates, and a load of ~1 to 2 N (~3.5-7.2 kPa pressure) was applied during brazing. The assembly was heated in a furnace to ~15-20 K above braze T_L) under vacuum ($\sim 10^{-6}$ torr), soaked for 30 min. at the brazing temperature, and slowly cooled to room temperature. The brazed joints were mounted in epoxy and prepared for metallurgical examination using grinding and polishing on a Buehler automatic polishing unit, and examined using optical microscopy (Olympus DP 71 system) and SEM coupled with EDS on a JEOL 840A unit. The polished joints were subjected to microhardness test with a Knoop micro-indenter on Struers Duramin-A300 machine under a load of 200 g and loading time of 10 s. Multiple hardness scans were accessed across representative regions of joined samples to check the reproducibility and consistency of the data.

Results and Discussion

This research investigated the use of metallic interlayers of graded strength and expansion properties to join Si_3N_4 to Ti and to Inconel 625. The graded interlayer approach utilizes a variety of materials that have coefficients of thermal expansion (CTE) within the range of the materials that are being bonded together. With this approach, the goal is to lessen the internal stress of the bond between Si_3N_4 and Inconel-625 (or Ti) by layering the other materials so that the CTE transitions from the Si_3N_4 to the Inconel-625 (or Ti). In the study, the materials used as interlayers were tungsten (CTE: $4.5 \times 10^{-6} \text{ K}^{-1}$), molybdenum (CTE: $4.8 \times 10^{-6} \text{ K}^{-1}$), tantalum (CTE: $6.5 \times 10^{-6} \text{ K}^{-1}$), niobium (CTE: $7.1 \times 10^{-6} \text{ K}^{-1}$), copper (CTE: $16.5 \times 10^{-6} \text{ K}^{-1}$), Kovar (CTE: $5.5\text{-}6.2 \times 10^{-6} \text{ K}^{-1}$), titanium (CTE: $8.6 \times 10^{-6} \text{ K}^{-1}$), and nickel (CTE: $13.4 \times 10^{-6} \text{ K}^{-1}$).

Theoretical models (Park et al (2002)) of residual stress in ceramic/metal joints indicate that such stresses might be effectively accommodated by a judicious

arrangement of ductile interlayers of graded yield strength and thermal expansion coefficient within the joint region. Furthermore, calculations also show that multiple interlayers accommodate residual stresses more effectively than single interlayers. One concern is that multiple interlayers also increase the number of interfaces within the joint and the probability of defects besides increasing the joint thickness. It also can be a challenge to keep the many layers from shifting around when brazing. Brazing of multilayer joints must, therefore, be done under carefully controlled conditions (e.g., high vacuum) to avoid formation of defects in multilayer joints.

Figure 1 shows Si_3N_4 joined to itself using Cu-ABA but without interlayers. The joint is devoid of interfacial defects such as voids and micro-cracks, and metallurgically sound. In the present study, the main criterion for acceptability of joints was taken to be defect-free interface structure as revealed via optical microscopy and scanning electron microscopy. EDS scans indicated that the interface is enriched in Ti and Si, possibly indicating reactive formation of titanium silicide that may have facilitated bond formation.

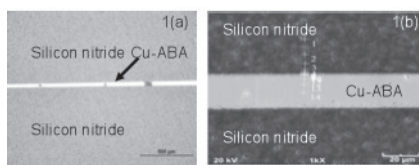


Fig. 1(a)

Fig. 1(b)

Fig. 1 (a) An optical photomicrograph and (b) a secondary electron SEM image of a $\text{Si}_3\text{N}_4/\text{Cu-ABA}/\text{Si}_3\text{N}_4$ joint.

The general procedure used in the study for brazing multilayer joints is schematically shown in Fig. 2(a). Figures 2(b)-(e) show the secondary electron images and EDS composition map for a multilayer $\text{Si}_3\text{N}_4/\text{Ti}$ joint with the following interlayer and braze foil arrangement:

$\text{Si}_3\text{N}_4/\text{Cu-ABA}/\text{W}/\text{Cu-ABA}/\text{Ta}/\text{Cu-ABA}/\text{Ti}$. Based on microstructure observation, the joint is sound and well-bonded; however, a curved crack has developed within the Si_3N_4 (Fig. 2b) possibly due to the residual stresses. The titanium substrate shows a diffused interface with the braze region. The Knoop hardness scans across the joints display a consistent pattern with the highest hardness in the ceramic followed by tungsten, tantalum, and Inconel-625. The braze and the neighboring interaction zone reveals a relatively low hardness.

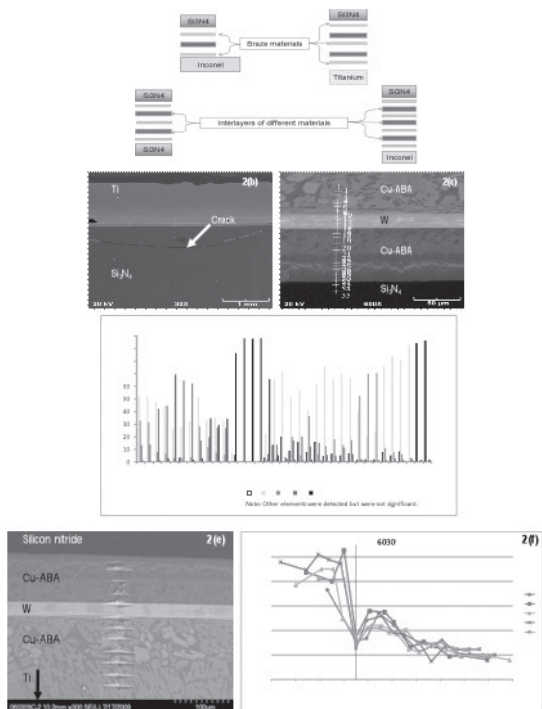
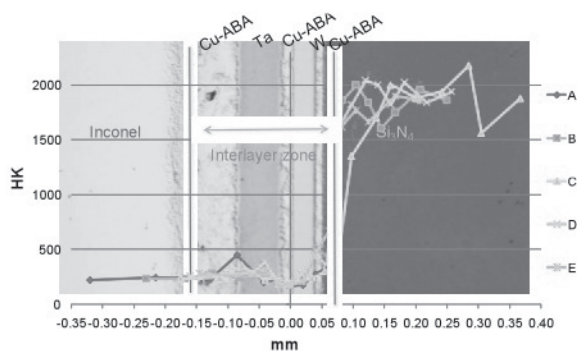


Fig. 2(a) Schematic of joint configuration with multiple interlayers, (b) overall view of a $\text{Si}_3\text{N}_4/\text{Cu-ABA}/\text{W}/\text{Cu-ABA}/\text{Ta}/\text{Cu-ABA}/\text{Ti}$ joint, (c) & (d) secondary electron SEM image and EDS composition plot across point markers shown in (c), (e) SEM view of the joint near $\text{Si}_3\text{N}_4/\text{Cu-ABA}/\text{W}$ side showing Knoop indentation marks, and (f) microhardness profile across the joint (multiple traces are marked as A, B, ...).

A Si_3N_4 /Inconel-625 joint with W and Ta interlayers with the following arrangement Si_3N_4 /Cu-ABA/W/Cu-ABA/Ta/Cu-ABA/Inconel, is shown in Fig. 3. The microstructure of the joint showing the physical location of the braze and W and Ta interlayers is shown in Fig. 3(a) together with superimposed Knoop microhardness profiles. The assembly is well-bonded at each interface within the joint, and EDS scans across the Si_3N_4 /Cu-ABA interface reveal a reaction layer enriched in Ti and Si (point markers 6-12 in Fig. 3b & c). This reaction layer could possibly be a titanium silicide reaction layer.

Figures 4(a)–(d) show a Si_3N_4 /Inconel-625 multilayer joint containing W and Mo interlayers with the following arrangement: Si_3N_4 /Cu-ABA/W/Cu-ABA/Mo/Cu-ABA/Inconel. Although the joint visibly displayed integrity and appeared to be well-bonded, a few microvoids were observed within the joint region. Additionally, a crack that emanates from the reaction zone propagates through the Si_3N_4 parallel to the joint region (Fig. 4a). At the Si_3N_4 /Cu-ABA interface (Fig. 4b) Ti and Si enrichments are noted (Fig. 4c). The microhardness scans (Fig. 4d) across the joint are reproducible, and display the highest hardness within the Si_3N_4 and two



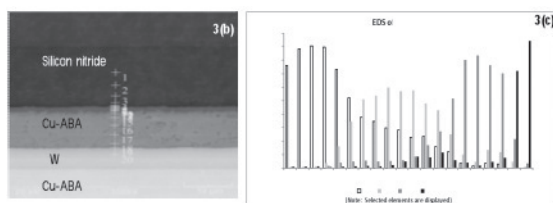


Fig. 3 (a) An optical photomicrograph of a multilayer Si₃N₄/Cu-ABA/W/Cu-ABA/Ta/Cu-ABA/Inconel joint showing interlayers and superimposed microhardness profiles, and (b) & (c) show the Si₃N₄/Cu-ABA interface together with the elemental composition at point markers of Fig. 3b.

smaller peaks within the hard W and Mo interlayers. The braze (plus interaction zone) region displays the lowest hardness. Overall, the joint may be considered of acceptable quality.

The secondary electron SEM images of a Si₃N₄/Inconel-625 joint made using W and Kovar interlayers in conjunction with two types of braze foils, Cu-ABA and MBF-20, is shown in Fig. 5. The joint configuration is as follows: Si₃N₄/Cu-ABA/Kovar/Cu-ABA/W/Cu-ABA/Kovar/MBF-20/Inconel. The joint contains two Kovar interlayers each of 390 μm thickness (similar joints with thicker, 500 μm, Kovar interlayers yielded inferior joints). The interfaces across the different regions of the joint (Fig. 5a & b) are defect-free and well-bonded, and display reaction layer formation. No evidence of cracking was observed in the joint. Identical joints with Ta in place of W led to unacceptable joints that exhibited defective interfaces and cracks.

Figure 5 shows two other multilayer joints: Si₃N₄/Cu-ABA/Ni/Cu-ABA/W/Cu-ABA/Si₃N₄ (Figs. 5c) and Si₃N₄/Cu-ABA/Ni/Cu-ABA/W/Cu-ABA/Inconel (Fig. 5d). The first joint, Si₃N₄/Si₃N₄, with single layers of Cu-ABA, Ni and W yields an excellent joint with no evidence of interfacial defects and/or cracks. The second joint, Si₃N₄/

Inconel-625, is also of acceptable quality although there is evidence of a few voids in the joint region.

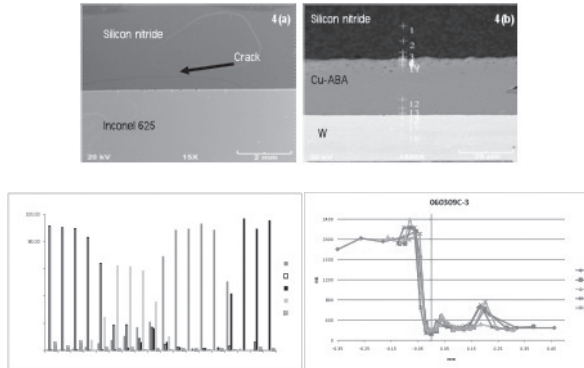


Fig. 4(a) Overview of a Si₃N₄/Cu-ABA/W/Cu-ABA/Mo/Cu-ABA/Inconel joint, (b) & (c) Si₃N₄/Cu-ABA interface and the corresponding elemental composition, and (d) Knoop microhardness distribution across the joint.

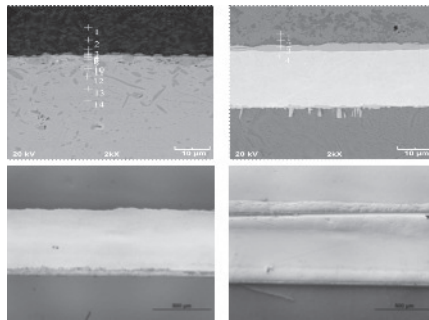


Fig. 5(a) & (b) Si₃N₄/Cu-ABA/Kovar/Cu-ABA/W/Cu-ABA/Kovar/MBF-20/Inconel joint showing (a) Si₃N₄/Cu-ABA and (b) W/Cu-ABA interfaces, (c) & (d) optical photomicrographs of a (c) Si₃N₄/Cu-ABA/Ni/Cu-ABA/W/Cu-ABA/Si₃N₄ joint, and (d) a Si₃N₄/Cu-ABA/Ni/Cu-ABA/W/Cu-ABA/Inconel joint.

Interestingly, increasing the number of Cu-ABA braze foils from one to two at each location within the joint of Fig. 5d yielded poor quality joints. Likewise, adding a Ni interlayer toward the Inconel side in the following arrangement also yielded a microstructurally poor-quality joint: Si₃N₄/

Cu-ABA/Ni/Cu-ABA/W/Cu-ABA/Ni/Cu-ABA/Inconel. However, the same joint produced excellent results when the number of Cu-ABA layers was increased from one to two; the joint was well-bonded and defect-free (although a small crack formed in the silicon nitride). These empirical results suggest that braze layer thickness must be controlled in relation to the type, number and arrangement of the ductile metal interlayers in order to achieve sound bond quality.

Overall, interlayers of Ta and W; Ni and W; Kovar (390 μm thick) with W; and of Ni, W, Ni all joined with the substrates of Si_3N_4 and Inconel-625. The two that were composed of Si_3N_4 bonded to Si_3N_4 were without cracking and had excellent bonding. The combinations that had a substrate of Ti did not bond well except when W and Ta were used in conjunction with two Cu-ABA foils. Other possible combinations of the same interlayer materials should be examined (e.g., Ni and Ta). All such empirical observations should be i) organized and evaluated to identify interlayer configurations that yield acceptable joining response, and ii) examined in light of the theoretical models of ceramic/metal bonding behavior. In addition, brazing runs should be made in progressively more complex (e.g., non planar) configurations to test the effectiveness of selected configurations to joining real components. Finally, extensive testing for joint strength and other properties (fracture toughness, corrosion resistance) should be carried out at room- and elevated temperatures to provide the designer reliable processing-properties database.

Conclusions

A CuSiAlTi active braze was used to join the Ni-base superalloy Inconel-625 and titanium to St. Gobain silicon nitride (NT-154) for NASA's Subsonic Rotary Wing

project. An attempt was made to manage residual stresses during joining by judiciously arranging interlayers of Ni, W, Mo, Ta, Cu, and Kovar within the joint. The vacuum brazed joints were evaluated for metallurgical structure, elemental distribution, and microhardness. The results showed that interlayers of Ta and W; Ni and W; Kovar and W; and Ni, W, Ni led to sound joints between Si_3N_4 and Inconel-625 or Ti. Micro-cracking within Si_3N_4 occurred in some systems without impairment of joint integrity. Evidence of interfacial reaction layers with relatively large Ti and Si concentrations points toward chemical bonding due presumably to titanium silicide formation which bonded well to both the alloys and Si_3N_4 .

Acknowledgment:

Thanks are due my NASA mentor, Mr. Mike Halbig, Materials Research Engineer, U.S. Army Research Laboratory's Vehicle Technology Directorate, and research advisor and collaborator, Dr. Jay Singh, Chief Scientist, Ohio Aerospace Institute, NASA Glenn Research Center. Appreciation is expressed to Lewis' Educational and Research Collaborative Internship Program (LERCIP) for a Summer Internship Award.

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The Impact of Health Insurance on College Students' Lives

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Key Words: college students, health insurance, uninsured

Abstract

Researchers have found evidence that college students who had inadequate health insurance tended to have difficulties focusing on their academics and work (Cook & Holahan, 2008; Arnold & Nicoteri, 2005; D'Heilly, Ehlinger, & Nichol, 2005; Molnar, 2002). The central research question in this study was, "What are college student attitudes regarding the impact of health insurance on their lives?" The authors predicted that uninsured college students would suffer higher stress levels and lower overall quality of life, poor academic and work performance, and larger financial burdens. The participants were 192 male and female undergraduate students at a university in Wisconsin. Survey data was statistically analyzed using cross-tabulations, mean comparisons, independent t-tests, and a reliability analysis. Statistically significant mean differences were found in support of the hypotheses. Implications for practitioners in college health services are to increase awareness, prevention, and access to comprehensive health services among all students. Implications for future research would be to use a larger and random sample in order to be able to generalize to the greater college student population.

Introduction

Researchers have found evidence that those college

students who had inadequate health insurance tended to have difficulties focusing on their academics and work. Students also had trouble obtaining appropriate health care (Holahan & Cook, 2008; Nicoteri & Arnold, 2005; Nichol, D'Heilly, & Ehlinger, 2005; Molnar, 2002). College students who suffered from cold and flu viruses were more likely to miss class or work, or refrain from seeking medical attention until they were rushed to the emergency room. Students who had regular check-ups and received appropriate vaccinations were shown to have a higher health-related quality of life according to researchers (Nicoteri & Arnold 2005; Nichol et al. 2005). Studies have found that even when college students are insured, they are not always aware of their benefits. They are also not aware of which facilities they are able to use and reported waiting to visit the doctor until they are in need of emergency medical attention (Molnar, 2002). Is there enough evidence among researchers to state that college students who have inadequate health insurance are more negatively affected in their daily lives? After researchers reviewed current literature on the relationship between college students and health insurance, college students, ages eighteen and above, were surveyed at a small Midwestern university to study this relationship.

Literature Review

Researchers have addressed the issue of health care and the lack of knowledge many people have regarding their health care coverage. The main focus of the literature was the behaviors college students had toward accessing health care and what their current health care insurance covers. Researchers looked at statistical changes in the United States health insurance coverage, which showed health insurance is still decreasing. Another study focused on the health care-seeking behaviors in traditional-aged, undergraduate college students, which provided valuable information regarding

students' health care coverage and how they reacted to it. Results showed that lower classmen were more unaware of their health care options and hesitant to access them, which resulted in many unnecessary trips to the emergency room. Educating college students about their health insurance can help students understand their health care possibilities. The third study researched the impact illnesses had on health, academic and work performance, as well as health care center use. This cross-sectional study (which is a study of individuals based on different criteria at the same point in time) identified the importance of student health insurance waiver forms and the reliability of them. This is important because many universities are not required by law to pay any medical bills, and with the waivers can protect the college from lawsuits brought against them. Health insurance coverage and knowledge among young people have very low statistics (Holahan & Cook, 2008; Nicoteri & Arnold, 2005; Nichol et al. 2005; Molnar, 2002).

Holahan and Cook (2008) studied two sets of people in relation to the United States economy and the changes that it had on health insurance coverage from 2000-2006. The first data set examined was one in which the U.S. economy was in a recession or emerging from it and the second set was one in which the economy was expanding. This study showed that within the first major period, the rate of employer coverage for adults fell by 4.6% points. Even when the economy improved, the uninsured rate still increased. The cause of the increase in these uninsured rates may have been due to the increased cost of health insurance premiums. The more expensive the insurance package was, the more that was deducted from a worker's paycheck. This could be detrimental to low-income individuals.

Nicoteri and Arnold (2005) focused on undergraduate students and their development of health care-seeking behaviors. They conducted a pilot study with a focus group

of eight traditional-aged students. They found that there are five major themes that students seeking health care autonomously displayed. These major themes included: needing care or help, expectations, decision making, healthcare accessibility, and future needs. The authors also took into account other influencing factors such as: peers, the society, and the socialization process. The students stated they felt fairly comfortable regarding where to go for their health care needs and what to expect; however, the younger participants were more hesitant and unsure of what to expect. Further research is needed to understand how students develop their behaviors toward seeking health care so that providers may impact students at a more direct level.

Nichol et al. (2005) conducted a cohort study with college students who were infected with cold and flu viruses to see the effects it had on their health, academic and work performance as well as their use of health care. The participants included 3,249 college students with a mean age of 22.9 and sampled from the University of Minnesota, Twin Cities. Monthly follow-ups were conducted over a five month period. Of all the participants, 91% had one or more upper respiratory illnesses (URIs). Of this 91%, 83% had one or more colds and 36.7% had one or more influenza-like illnesses (ILIs). The students who were infected missed 4.263 school days and only 22.2% of them visited a health care center once or more. This study concluded that URIs and ILIs are prevalent among college students. The effects they have on students are quite detrimental on their class attendance and mental state. They stated that increasing prevention and vaccinations could increase the wellness of students in our nation. The fact that many college students are getting infected without much treatment may be a cue for health care centers to be more accessible to students.

Molnar (2002) examined Cornell University (CU) students' insurance waiver forms. If a student did not decide

to purchase the university's health insurance plan, CU required them to fill out a student health insurance waiver form, which documented for the university that they had adequate health care coverage. These waiver forms had to meet several requirements under CU's request. Molnar conducted a cross-sectional study to see how many of the forms were in fact, not covered. Of 12,000 student waivers for one academic year, CU staff selected 372 random waivers for the audit which consisted of undergraduate, graduate, and professional students. The ages of the students in this study ranged from 17-45 years. The results showed that 31% of the student's waivers were not covered by a health insurance company. Of the students who had insurance waivers, 43% did not meet the specific requirements and were therefore denied. This study showed that the majority of students who were covered were generally covered through a parent or guardian. The remaining students from this majority were students who had purchased insurance coverage on their own. This study concluded that over 40% of the waiver forms were from students who were uninsured or had inadequate insurance. This study showed that many students from one university had inadequate health coverage or no coverage at all. Of the students that had health care coverage, most obtained coverage through their parent or guardian; however, several had to purchase their own health care coverage while going to school.

Overall, this research topic was missing information on the current status of college students' health care coverage and the effects it specifically had on their lives. Research has shown that the economy affects health insurance costs and accessibility through employment. As the economy has fallen into a recession, the cost of health insurance grew higher as did the number of uninsured individuals, primarily through job loss. Insurance packages became more expensive which deducted more from a worker's income. This was especially

detrimental to low-income individuals. This is a very serious issue in our country and is relevant today in times of economic uncertainty. As students think about their health insurance now and after graduation, it is very important for them to think about where the current economy stands and how it will affect the future health care system outlook. Research is lacking in the area of current college students' attitudes regarding their health care coverage and what affects their coverage or lack thereof has on their quality of life.

Theoretical Framework

This study applied the Family Ecology framework (Bubloz & Sontag, 1993). The Family Ecology Theory assumes that individuals going through developmental processes are influenced by the environments in which they live. The environment that influences individual development consists of these four organizational concepts: microsystem, mesosystem, exosystem, and macrosystem. The microsystem immediately affects the direct environmental setting; the mesosystem is the interlinked collection of microsystems; the exosystem is two or more indirect settings that affect the individual, and the macrosystem is the outer most influence on values, norms and patterns that contributes to the individual's response to society.

The application of the Family Ecology Theory to this study would predict that the college student's overall well-being would be affected negatively if they are not adequately health-insured. The Family Ecology Theory would predict that the status of the students' or parents health insurance would have immediate limitations and constraints on the students' well-being. Another prediction according to the theory, having parents that have lost their health benefits at work would result in the student losing their health insurance or paying for it themselves. The theory would also predict that the state of the economy would result in a lack of

adequate health benefits which would affect the students' availability of health insurance. Lastly, the societal attitudes and values towards health insurance would have an impact on the students' future.

Purpose Statement

The purpose of this study was threefold: (1) to examine the attitudes college students have regarding health insurance and how it impacts quality of life; (2) to develop a reliable survey instrument to measure the affects health insurance has on college students' lives, and (3) to provide data to help support the importance of accessible, affordable, and adequate health insurance. The authors found a similar study by Molnar (2002) who found that almost half of the college students were inadequately or completely uninsured.

The central research question in this study was "What are college student attitudes regarding the impact of health insurance on their lives?" The authors predicted that college students who were not insured would suffer higher stress levels and lower overall quality of life. It was hypothesized that college students would report high levels of stress, poor academic and work performance, and large financial burdens due to being uninsured or having inadequate health insurance. As for the college students who were adequately insured, they would have reported lower levels of financial difficulties and stress and higher levels of academic achievement. The authors' hypothesis was informed by the literature which reported a relationship between inadequate health insurance and negative effects on college students. This hypothesis was also supported by the Family Ecology Theory which helps explain a relationship between an individual's development and the context of their environment. College students who were insured inadequately or not at all could receive the proper medical care they needed. Therefore, based on Family Ecology Theory, students who had inadequate health

care would suffer from financial strain, poor work and school attendance and achievement, and their overall health.

Method

Participants

The site of this study was at a university in northwestern Wisconsin. The participants were 192 undergraduate students, 106 were female and 86 were male. There were 58 participants between the ages of 18-19, 45 between the ages of 20-21, 38 between the ages 22-23, 22 between the ages of 24-25, and the remaining 29 participants were 26 years or older. Regarding having a form of health insurance there were 120 participants that had health insurance and the other 72 did not have a form of health insurance. There were 110 participants whom had health insurance under their parents, and 82 participants that did not have health insurance under their parents. There were 19 participants who had health insurance on their own, and 173 participants that did not have health insurance on their own.

Research Design

The purpose of this survey research was to investigate the affects college students' health insurance had on their lives and be able to generalize to a population with similar attitudes (Babbie, 1990). The survey design type is best described as a cross-sectional study design in that it was used to capture attitudes from a cross-section of the population at one point in time. The form of data collection was self-administered questionnaires. The rationale for using self administered questionnaires was that it was the most efficient way to collect data on campus, due to the limited time frame of our research course and the quick return of data. The population was the university student population; the sample was male and female students in theatre, speech and management classes. The study used a non-random purposive sample

design; this is because the purpose of going into these specific classes was to gather information from an equal ratio of male and female undergraduate students. Throughout the short period of time that was given, randomization was not used in order to be able to reach the targeted sample number. The ethical protection of human subjects was provided by completing the Human Subjects Institutional Review Board (IRB) training; this study has been approved by the IRB.

Data Collection Instrument

A survey was designed to address the attitudes of students regarding their health insurance. The survey included a cover letter with an implied consent which included a description of the study, risks and benefits, time commitment, confidentiality, voluntary participation, and contact information of the research team and the supervisor as well as instructions for completing the survey.

The survey consisted of three demographic questions relating to gender, age, and the status of their health insurance to compare groups and analyze our data. Students were then given six closed-ended statements based on a 5-point Likert scale which measured the intensity of the respondents' attitudes ranging from one (strongly disagree) to five (strongly agree). Questions were informed by literature and theory regarding what related to attitudes regarding college students' health insurance status.

The survey instrument has both face validity and content validity. Face validity refers to the instrument questions being relevant to the concept and research question. Since the questions and concepts addressed in the survey were inspired by literature, it was determined that they were clearly relevant to the larger problem of uninsured students. Content validity refers to the instrument statements' coverage of all the concepts under the larger topic. The questions addressed a broad range of issues regarding

students' knowledge, status, and attitudes regarding their own health insurance. To increase validity, the survey was piloted to four undergraduate students. Feedback indicated that the survey was clear and ready for distribution.

Procedure

Professors were first contacted by email to receive approval to survey their students between November 9, 2009 and November 15, 2009. The purposive sampling design led the researchers into the buildings where the classes had both male and female undergraduate students. Students were introduced to the researchers; then were given basic information found in the description part of the implied consent form. This was followed by expressing the importance of their participation and appreciation for taking their time to complete the survey. The implied consent form was read aloud to the students as they followed along. The students were told that their participation was completely voluntary and that they would be able to withdraw from taking the survey at any time. They were asked if clarification was needed about the consent form but not the survey. They were then asked to detach the implied consent form for them to keep; they then took the survey at their desks after the researchers and the professor left the classroom. They put their surveys into a manila envelope that was placed at the front of the classroom. The surveys were collected and the researchers thanked the participants and professor for their contribution to the research. When the surveys were collected, they were kept in a locked file cabinet in one of the researcher's homes until data analysis.

Data Analysis Plan

The data was first "cleaned" and checked for any missing data. The first five questions on the survey were demographic variables: gender, age, and three questions

regarding current health insurance status. The only independent variable was if the student had a form of health insurance (*INS*). Each survey statement was a dependent variable and given an acronym name: To determine if the participant has access to services that meet the health needs (*ACC*), if the participant is able to afford out of pocket medical expenses (*EXP*), if they are able to provide for their health needs (*PRO*), if the participant has visited a health care professional within the last year (*VIS*), the respondents visit a health provider for preventive care (*CAR*), and if they worry in the future that they may lose their health insurance if they lose their job (*LOS*). To analyze the data, the data-analyzing computer program called *Statistical Package for the Social Sciences* (SPSS), was used. The individual was used as the level of analysis. Given that the groups were being compared based on their current health insurance status, data analysis included: frequencies, cross-tabulations, mean comparisons, and independent t-tests. A Cronbach's Alpha reliability analysis was also conducted.

Results

The computer program *Statistical Package for the Social Sciences* (SPSS) was used to analyze the data collected. The analyses variables were subjected to include: frequencies, cross-tabulations, mean comparisons, independent t-tests, and a reliability analysis. The first analysis run was a frequency distribution analysis. This analysis indicated that there was no data missing from the surveys.

Cross-tabulations were run with the independent variable, *INS*. For *EXP*, *PRO*, and *CAR*, there appeared to be a difference between groups with the majority of uninsured students having disagreed. For *ACC* and *VIS*, the majority of insured students strongly agreed. For *LOS*, the majority of insured students strongly disagreed, but the majority

of uninsured students strongly agreed (refer to Table 1 for Cross-Tabulations and Table 2 for Mean Comparisons).

Table 1
Cross-Tabulations

ACC						
INS	SD	D	U	A	SA	Total
Yes	.8%	3.3%	10.0%	30.0%	55.8%	100.0%
No	25.0%	8.3%	27.8%	12.5%	26.4%	100.0%
EXP						
INS	SD	D	U	A	SA	Total
Yes	25.0%	20.0%	20.0%	16.7%	18.3%	100.0%
No	75.0%	9.7%	8.3%	.0%	6.9%	100.0%
PRO						
INS	SD	D	U	A	SA	Total
Yes	7.5%	8.3%	19.2%	30.0%	35.0%	100.0%
No	52.8%	0.0%	36.1%	4.2%	6.9%	100.0%
VIS						
INS	SD	D	U	A	SA	Total
Yes	9.2%	2.5%	5.8%	15.8%	67.5%	100.0%
No	40.3%	12.5%	18.1%	0.0%	29.2%	100.0%
CAR						
INS	SD	D	U	A	SA	Total
Yes	13.3%	16.7%	21.7%	19.2%	29.2%	100.0%
No	61.1%	18.1%	20.8%	0.0%	0.0%	100.0%
LOS						
INS	SD	D	U	A	SA	Total
Yes	28.3%	17.5%	19.2%	14.2%	20.8%	100.0%
No	13.9%	16.7%	18.1%	8.3%	43.1%	100.0%

Note. (ACC)=Students have access to health need services; (EXP) =Students are able to afford out of pocket medical expenses; (PRO) =Students are able to provide for their health needs; (VIS) =Students have visited health care provider within one year; (CAR) = Students visit a health care provider for preventative care; (LOS) =Students worry they will lose their insurance in the future if they lose their job.

Table 2
Compare Means

INS	ACC	EXP	PRO	VIS	CAR	LOS
Yes:						
Mean:	4.37	2.83	3.77	4.29	3.34	2.82
SD:	0.86	1.45	1.23	1.26	1.40	1.51
Range:	4.00	4.00	4.00	4.00	4.00	4.00
No:						
Mean:	3.07	1.54	2.13	2.66	1.60	3.50
SD:	1.51	1.13	1.30	1.68	0.82	1.52
Range:	3.00	4.00	4.00	4.00	2.00	4.00

Note. (ACC)=Students have access to health need services; (EXP) =Students are able to afford out of pocket medical expenses; (PRO) =Students are able to provide for their health needs; (VIS) =Students have visited health care provider within one year; (CAR) = Students visit a health care provider for preventative care; (LOS) = Students worry they will lose their insurance in the future if they lose their job.

An independent samples t-test was run to compare mean scores for insured and uninsured students. There were four variables with significant mean differences between the two groups of students (refer to Table 3).

Table 3
Independent T-tests

Variable	Insurance		t	Df	Sig.
	Yes	No			
ACC	3.37 (.859)	3.07 (1.51)	6.66	98.9	*0.000
EXP	2.83 (1.45)	1.54 (1.13)	6.91	177.4	*0.000
PRO	3.77 (1.23)	2.13 (1.30)	8.65	142.9	0.054
VIS	4.29 (1.30)	1.26 (1.68)	7.16	118.9	*0.000
CAR	3.34 (1.40)	1.60 (.816)	10.9	189.9	*0.000
LOS	2.82 (1.51)	3.50 (1.52)	-3.026	148.6	0.562

Note. (ACC)=Students have access to health need services; (EXP) =Students are able to afford out of pocket medical expenses; (PRO) =Students are able to provide for their health needs; (VIS) =Students have visited health care provider within one year; (CAR) = Students visit a health care provider for preventative care; (LOS) =Students worry they will lose their insurance in the future if they lose their job. *significant @ p<=.01, two tailed. Standard deviations appear in parentheses below means.

A reliability analysis was run to indicate if the variables were a reliable index to measure the major concept: College students' attitudes regarding the impact health insurance has on their lives. Cronbach's Alpha is a measure of reliability and was .576. This value indicated that survey items were a moderately reliable measure of the major concept. If the variable *LOS* were removed, the reliability would raise to .790.

Discussion

Overall, results supported the hypothesis that college students would report higher levels of stress, poor academic and work performance, and larger financial burdens due to being uninsured or having inadequate health insurance; significant mean differences were found ($p < .01$ level). These differences were supported in the literature (Holahan & Cook, 2008; Nicoteri & Arnold, 2005; Nichol, D'Heilly, & Ehlinger, 2005; Molnar, 2002). Each dependent variable will be discussed in terms of how the results were supported in the literature and /or through the theoretical framework. Thereafter, limitations to the study, implications for practitioners, implications for future research, and concluding remarks will be discussed.

Statistically significant mean differences were found in four out of six variables (*ACC-access to health services*, *EXP-medical expenses*, *PRO-able to provide for health care needs*, *VIS-visited health care provider*, *CAR-preventative care*, *LOS-worry they will lose their health insurance*) in support of the hypothesis. Results showed that more respondents who had health insurance agreed that they had access to health services while the uninsured students had a wide range of results with the majority falling below undecided. This was not supported in the literature. According to Nichol et al., college students are getting sick and do not have access to health care centers (2005). The

next survey statement was that students were able to afford out of pocket medical expenses; the majority of both groups disagreed which was supported in the literature. Holahan & Cook (2008) stated that low-income individuals were not able to afford health insurance packages out of pocket due to increased cost of health insurance premiums. The majority of insured students strongly agreed that they visited a health care provider within one year while the majority of uninsured students did not. According to Niceteri & Arnold (2005) college students were unsure about accessing health care services. Lack of education about their current coverage made them unaware of their current health care possibilities which resulted in some students visiting the emergency room unnecessarily. The next survey statement interestingly showed the majority of students who were insured were undecided regarding if they visited a health care provider for preventative care. The majority of uninsured students strongly disagreed with this statement. These two findings were both supported by Nicoteri & Arnold (2005) who focused on the development of health care-seeking behaviors. Often, students are not informed on what their insurance covers and have been shown to not visit a health care provider without their parent's initiation to set up an appointment. Students may have not understood the statement clearly which resulted in the many undecided responses. The survey statement that students are able to provide for their health needs showed that the majority of insured students were undecided while the majority of uninsured students disagreed. This is supported by the literature which states that many students had inadequate or no coverage at all (Molnar, 2002). The undecided may have been a result from the insured students because they do not deal with expenses when they are insured or have their parents (if insured under their parents) take care of the finances. Regarding the last survey statement that students worry they will lose their

insurance in the future if they lose their job, the majority of uninsured students strongly agreed while the insured students were undecided. Insured students may not realize the importance of health insurance and do not think it will affect them if they were to lose their insurance. Nicoteri & Arnold (2005) supported these findings with the five major themes in college students who seek health care services: needing care or help, expectations, decision making, health care accessibility, and future needs. Students need to be educated on their health care options.

Limitations

This study used a nonrandom sample which did not allow for generalization to the larger population of college students. The Likert scale might be too limited in range and could account for the undecided responses.

Implications for Practitioners

The results showed that implications for college health services would be to increase awareness and prevention as well as access to comprehensive health services among all students. Our results significantly demonstrated that the majority of uninsured students were concerned with the cost of health care which, in turn, resulted in few or no doctor visits within the past year. Attention needs to be taken to the state and national policy levels.

Implications for Future Research

It is recommended that the next step of research be to survey a large, random, national university sample. If this study were to be replicated, rewording or eliminating the variable (LOS) would be suggested: *students worry they will lose their insurance in the future if they lose their job*. According to the reliability statistics, Cronbach's Alpha would raise from .576 to .790. This may be because it is

the only statement that does not currently affect their health insurance needs. It would also be recommended that a more varied measurement scale be used to provide a greater range of responses.

Conclusion

As a result of this study, it is hoped that access to health care services for college students will be recognized as an issue that needs to be addressed in college campuses nationwide at the state and national policy levels. Education and communication regarding the importance of health care service accessibility among college students, their parents, universities, and health care providers needs to be implemented. Our findings showed that the majority of uninsured individuals were students who were twenty-six and older. These were the students who were most concerned with their health care, no longer on their parent's insurance, did not visit a health practitioner within the last year, and who also could not afford out of pocket expenses. This shows the importance of providing accessible and affordable health care to all students. This could allow students not to worry about the financial burden of health care costs and have the ability to access health care services confidently to promote healthy lifestyles.

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College Students' Attitudes towards Homosexuality

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Key Words: college students, gender attitudes, homosexuality

Abstract

Attitudes towards homosexuality are influenced by several factors: religion, media, family, peers, gender and contact with homosexual individuals (Riaz, 2006; Calzo & Ward, 2009). How these factors intersect to form one's attitude is not fully understood. The purpose of this study was to identify if there are gender differences determining what influences shape attitudes towards homosexuality. The central research question in this study was, "Are there gendered differences determining what factors influence college students' attitudes toward homosexuality?" This study was conducted at a small Midwestern university; participants were 128 male and female students. Survey data was statistically analyzed using cross-tabulations, mean comparisons, independent t-tests, and a reliability analysis. Findings supported the hypothesis; there were significant mean differences in seven of the ten variables. Implications for practitioners include taking gender into account when working with issues surrounding homosexuality. It is recommended that males be provided with additional education regarding homosexuality to increase sensitivity. Implications for future research include qualitative interviews and focusing on family and religion in the development of attitudes.

“I feel that we need to make homosexuality a more positive thing in society.”

~Anonymous survey participant

Recent studies support the idea that a person's attitude towards homosexuality is influenced by several factors including religious affiliation, religiosity, mass media, family, peers, a person's gender, and overall contact with homosexual individuals (Riaz, 2006; Calzo & Ward, 2009). Exactly how these factors intersect with one another to form a college student's overall attitude towards homosexuality is not fully understood, though associations between religion and family have been greatly recognized. Homosexuality is defined as sexual desire or behavior directed toward a person or persons of one's own sex (Webster, 2001). There needs to be more research focused primarily on college students and the factors that influence their attitudes on controversial issues such as homosexuality. It is essential to gain a greater understanding of how certain attitudes are developed, such as those towards homosexuality. Attitudes towards homosexuality influence how people interact with members of the homosexual community. Negative attitudes have been associated with hate crimes directed towards homosexual individuals, while positive attitudes have been associated with social activism for the homosexual community. Within the current literature, researchers agreed that there are several factors that influence a person's attitude. The focus of this study was to determine if there were gender differences regarding what the main factors are that influence college students' attitudes towards homosexuality. After the researchers reviewed current literature on what factors influence a college student's attitude towards homosexuality, male and female college students age 18 and above were then surveyed at a small Midwestern University.

Literature Review

The search engine Ebscohost was used to review the literature on differing factors contributing to college students' attitudes towards homosexuality. The literature found on this topic mainly focused on traditional aged college students with the average sampling age ranging from 18 to 25. In one previous study, religious affiliations were examined in a nationally represented survey of 1,610 legal adult citizens that resulted in a gap representing college students. In one study, pairs of twins, ages ranging from 18 to 25 were surveyed studying the influence of genetics on homophobic tendencies. This study was conducted in Australia, however; the information provided by this study was crucial to our research on family and the connection to attitudes towards homosexuality. The studies focused on similar variables such as gender, sexual orientation, age, family and peer influences, religion, and mass media (Calzo & Ward, 2009; Verweij, Shekar, Zietsch, Eaves, Bailey, Boomsma, & Martin, 2008; Olson, Cadge, & Harrison, 2006; Raiz, 2006).

Calzo and Ward (2009) examined the effects that the media had upon an individual's attitude towards homosexuality. This included looking at what types of television shows and movies one watched, the types of magazines one read, and how much exposure one had to the media. They found that specific genres of media, such as prime time television shows or magazines one prefers, such as teen magazines, may have the strongest influence upon a person's perception of homosexuality. The more a person consumed a specific type of media genre, the more the person's perception may be influenced. However, even when one consumed large amounts of media it did not imply that one would become more or less accepting of homosexuality. The study also found that the more media exposure males had, the more they moved toward flexible gender roles, which reflected a more accepting attitude toward homosexuality. Exposure to media appeared to

lessen the gap between male and female attitudes towards homosexuality, which was contrary to previous research on traditional gender role beliefs. This study also found that media use will often challenge an individual's preexisting attitudes, but overall the biggest indicator of media influence would be what genre is being watched, how often it is being watched, and gender of the person that is watching it.

In the second article, Verweij et al. (2008) explored the genetic and environmental influences on attitudes by comparing results from monozygotic and dizygotic twins of either the same sex or opposite sex. The study found that there was a difference in the distribution of attitudes towards homosexuality between males and females, with males tending to be more homophobic than females. Results suggested that a possible source of family attitudes towards homosexuality may be transferred genetically and that the genes that influence males are different from those genes that influence females. Results supported the idea that environmental influences are relatively small in comparison for males, but both genetics and the environment had a shared effect upon female attitudes. Some of the variations in homophobic attitudes were possibly due to environmental factors such as the norms and values that parents teach their children and the unique experiences that each individual had. They also found that heterosexual people held different attitudes towards gay men and lesbians, with lesbians generally being more accepted. The researchers concluded that it would be a wise idea to distinguish between male and female homosexuals in their questions because there are different stereotypes for each.

Olson et al. (2006) examined if religious practices influenced a person's attitude toward homosexuality. This study found that a person's religiosity and religious affiliation had a significant influence on their opinions about homosexuality. Congregation members that were heavily involved in the church and its social networks were likely to be

less accepting of homosexuality. Traditionally, homosexuality is opposed by most religious affiliations and there tends to be a clear message from the congregational leader that homosexual behavior is not accepted. When congregations express concern about moral values, individuals are much more likely to oppose gay marriage. All American religion is not entirely opposed to homosexuality and peoples' opinions toward homosexuality do tend to vary according to one's degree of religiosity. This article demonstrated that one's religiosity influences a person's opinion but is not the only factor in forming attitudes towards homosexuality.

Another piece of literature by Raiz (2006), examined the effects of gender role beliefs, peer support, and exposure to the gay community on the formation of college students' development for support of homosexuality. Results showed that contact with a homosexual acquaintance was associated with increased support for rights, while having a roommate that was openly gay was associated with decreased support for rights. Students who believed their family and friends to be more accepting were also more supportive. Students that viewed homosexuality as being a life style choice or students who considered themselves to be highly religious were less likely to be supportive of rights for homosexual people. The findings suggested that there is a relationship between family and friends attitudes towards homosexuality and a student's understanding and acceptance of what their religion has taught them. Also, how students perceive gender roles and the amount of contact students have had with the gay community played a part in the development of overall attitudes towards homosexuality.

The literature has established that religion, peers, family, mass media, and interaction with homosexual individuals contributed to the formation of attitudes towards homosexuality. Although the articles supported that all of these factors affected ones' attitudes, none of the studies have taken a comprehensive look at which factors had the greatest

influence. Since college is an influential period in many individuals' lives, it is important to examine what aspects people are introduced to that ultimately shape their opinions on controversial issues such as homosexuality. Through this study, researchers hope to advance the current literature by analyzing if there are significant gender differences regarding which of these variables or combination of variables is most influential upon the development of these attitudes among college students.

Theoretical Framework

This study applied the Family Ecology Theory framework (Bretherton, 1993). This theory assumes that individuals are affected by the different environmental settings by which they live and how these environments interact and affect one another. Environments under this theory include the microsystem, mesosystem, exosystem and macrosystem. The microsystem consists of the person-to-person interactions between individuals and factors that immediately affect a person. The relationship between two or more microsystems is defined as the mesosystem. An exosystem has inadvertent effects upon the individual even though it is not directly interacting with the individual. The macrosystem is composed of the societal norms and regulations that also affect an individual. The theory as a whole focuses on the interrelationships among all of these subsystems and how these environments influence the individual.

As applied to the study, the Family Ecology Theory would predict that there would be multiple influences that attribute to the development of college student's attitudes towards homosexuality. Researchers expect the different aspects (family, peers, religion, media, and gender) to influence a college student's microsystem and mesosystem. Researchers also expect religious and family beliefs to have the most influence upon an individual's attitude towards

homosexuality because these influences have been the most predominant throughout their development. Another prediction is that attitudes towards homosexuality would vary greatly according to gender. Researchers predicted females would be more accepting towards homosexuality than males because females have also experienced oppression and discrimination in the United States' macrosystem. Historically females have faced legal obstacles to gain equal status in our culture which could create empathy for homosexual persons who are also trying to gain ethical and legal equality in our society. Researchers also predicted that the media would play a pivotal role in impacting the exosystem and macrosystem of individuals because it is influential in shaping society's perceptions.

Purpose Statement

The purpose of this study had three parts: (1) to identify if there are gendered differences determining what influences have the most significant impact in shaping a college students' attitude toward homosexuality, (2) to develop a reliable survey instrument to measure these influences, (3) to provide the data collected to the GLBT support group on the college campus as well as local high school guidance counselors. The authors found a similar study by Raiz et al., (2006) who examined college students and what factors contributed to the student's level of support for gay men and lesbian rights. Raiz et al., found that students who held more traditional gender roles were significantly associated with less supportive attitudes towards homosexuality.

The central research question in this study was, "Are there gendered differences determining what factors influence college students' attitudes toward homosexuality?" The authors predicted that females would be overall more accepting towards homosexuality than males since females have also experienced oppression and discrimination in the United States. This hypothesis was supported by the Family

Ecology Theory, within the macrosystem of the United States, females and males are socialized differently regarding sensitivity and overall attitudes towards homosexuality. The authors' hypothesis was informed by the literature which consistently reported that religiosity and family influence impacts a person's attitude toward homosexuality. In the literature the other influences such as media influence, peer influences, and contact with homosexual persons did not have as direct of an impact on shaping a person's attitude towards homosexuality. This hypothesis was also supported by the Family Ecology Theory that the relationship between an individual's development and their environment is of great significance.

Method

Participants

The site of this study was at a Midwestern university. The participants were 128 undergraduate students; researchers surveyed two general Sociology classes, one Introduction to Construction class and one Human Development and Family Studies class. Of these 128, 56 of the participants were male and 72 were female. There were 70 participants between the ages of 18-19, 29 between the ages of 20-21, 19 between the ages of 22-23, five between the ages of 24-25, and the remaining five participants were 26 years or older. Religious affiliation was also taken into consideration. Of these 128 participants, thirty-five identified themselves as Christian, 31 identified themselves as Catholic, 29 identified themselves as Lutheran, seven identified themselves as Agnostic, four identified themselves as Atheist, one identified themselves as Baptist, one identified themselves as Methodist, one identified themselves as Presbyterian, one identified themselves as Interfaith, one identified themselves as Buddhist, one identified themselves as East Indian, 16 responded that they did not have a religion.

Research Design

The purpose of this survey research was to be able to generalize to a similar, larger population so that some inferences could be made about characteristics, attitudes, or behaviors of this population (Babbie, 1990). Current attitudes from our sample population were identified to generalize about a larger population of similar students on campus. The survey design type is best described as a cross-sectional study design in that it was used to capture knowledge, or attitudes, from a cross section of the population at one point in time. The form of data collection was self-administered questionnaires. The rationale for using this method was that it was the most efficient method to gather the data directly on campus due to the fast pace of our research course, convenience, low cost, and the quick return of data. The population was the university student population; the sample was male and female students in two general Sociology courses, along with one Construction Management course and one Human Development course. The study used a non-random purposive sample design, because the purpose of our study was to gain access to an equitable number of male and female students. Randomization was not used in order to be inclusive in the classroom. The ethical protection of human subjects was provided by completing the Human Subjects Institutional Review Board (IRB) training; this study has been approved by the IRB.

Data Collection Instrument

In order to address the factors that influence college students' attitudes toward homosexuality, a survey was designed. The survey included a cover letter with an implied consent which included a description of the study, definition of any terms not commonly known, risks and benefits, time commitment, confidentiality, voluntary participation, and contact information of the research team and the supervisor as well as instructions for completing the survey.

The survey consisted of three demographic questions relating to age, religious affiliation, and gender as a basis to compare groups and analyze our data. Participants were then given ten closed-ended statements based on a 5-point Likert scale which measured the intensity of the respondents' attitudes ranging from one (strongly disagree) to five (strongly agree). Questions were informed by literature and theories regarding what factors influence a college students' attitude towards homosexuality.

The survey instrument has both face validity and content validity. Face validity refers to the instrument questions having a logical connection to the concept and research question. Because the questions and concepts addressed in the survey are literature-inspired, it was determined that they clearly connected to the larger problem of what influences a college students' attitude towards homosexuality. Content validity refers to the instrument statements' coverage of the full range of concepts under the larger topic. The questions addressed a broad range of issues known to influence attitudes towards homosexuality, such as religion, media, family and peers. To increase validity, the survey was piloted to ten undergraduate students. Feedback indicated that the survey was clear and ready for distribution.

Procedure

To collect the data for this study, professors that taught specific courses on campus were contacted about allowing the researchers to survey their students. The classes surveyed consisted of an Introduction to Construction class, a Human Development and Family Studies class, and two Introduction to Sociology classes. Confirmation e-mails were sent and received and a date and time to survey was established. Then students were surveyed in classes on campus between November 3, 2009 and November 11, 2009. The purposive sampling design led the researchers to a classroom that had a majority of males, a classroom that

had a majority of females, and two classes that had equitable numbers of males and females. Classes were chosen this way to insure that researches would have an equitable number of males and females. The process of collecting the data was as follows. Randomization was not used in order to inclusive in the classroom. Researchers introduced themselves to the students, introduced the research study, and reviewed the first two pages of the survey, which is known as the implied consent. Researchers and the professor then left the classroom to provide confidentiality and to reduce any potential pressure to participate in the research study. Students were then able to fill out the survey and place it in a designated folder when they were done. Once all the surveys were collected, the researchers reentered the room and collected the folder. Over sampling was done by eight to ensure the target sample number in case of missing data. When the surveys were collected, they were kept in locked drawer in one of the researcher's homes until data analysis.

Data Analysis Plan

The data was first cleaned and checked for any missing data. The cleaned surveys were then coded using acronyms for each variable. The first three questions on the survey were demographic variables: age, and gender and religious affiliation. The independent variable was gender (GEN). Each survey statement was a dependent variable and given an acronym name: influences included mass media portrayal of homosexual individuals (MDP), media representation of homosexual relationships (MDR), the participants' religious affiliation (RAF) and level of religiosity or religious influence upon the participants' (RGN), if the participants' supported their religion's ideology towards homosexuality (SPR), the participants' perception of family acceptance towards homosexuality (FAM), the participants' perception of peer acceptance towards homosexuality (PER), the participants' overall contact with homosexual individuals (CWH),

the participants' supportive attitude for the homosexual community (SPA), how supportive they would be if a friend or family member identified as being homosexual (SPF) and if they were supportive of homosexuals having equal rights as heterosexuals in society, such as marriage, (RTM). To analyze the data, the data-analyzing computer program called Statistical Package for the Social Sciences (SPSS), was used. The individual was used as the level of analysis. Given that groups were being compared based on gender, data analysis included: frequencies, cross-tabulations, and mean comparisons. A Cronbach's Alpha reliability analysis was conducted. Independent T-tests were also conducted for significance testing.

Results

The computer program Statistical Package for the Social Sciences (SPSS) was used to analyze the data collected. The analyses variables were subjected to include: frequencies, cross-tabulations, mean comparisons, independent t-tests, and a reliability analysis.

The first analysis run was a frequency distribution analysis. This analysis indicated that there was no data missing from the surveys. Researchers identified eight surveys that were incomplete and chose to leave that data out of the SPSS analyses.

Cross-tabulations were run with the independent variable, GEN. For variables SPA, PER, SPF, RTM, and CWH, there appeared to be a difference between groups, with the majority of females having agreed and/or strongly agreed, and the majority of males were undecided, disagreed and/or strongly disagreed. For SPR there appeared to be a difference with the majority of males having agreed and/or strongly agreed, but the majority of females were undecided, disagreed and/or strongly disagreed. For FAM, RGN, MDP and MDR, there appeared not to be a significant difference between groups (refer to Table 1 for Cross-Tabulations and Table 2 for Mean Comparisons).

Table 1
Cross Tabulations

SPA						
GEN	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Total
Male	17.9%	23.2%	33.9%	19.6%	5.4%	100%
Female	9.7%	6.9%	9.7%	45.8%	27.8%	100%
FAM						
GEN	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Total
Male	26.8%	28.6%	30.4%	12.5%	1.8%	100%
Female	15.3%	25.0%	31.9%	23.6%	4.2%	100%
PER						
GEN	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Total
Male	26.8%	26.8%	33.9%	8.9%	3.6%	100%
Female	1.4%	8.3%	29.2%	40.3%	20.8%	100%
SPF						
GEN	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Total
Male	7.1%	5.4%	35.7%	37.5%	14.3%	100%
Female	1.4%	4.2%	15.3%	26.4%	52.8%	100%
RGN						
GEN	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Total
Male	12.5%	10.7%	19.6%	23.2%	33.9%	100%
Female	15.3%	9.7%	23.6%	16.7%	34.7%	100%
SPR						
GEN	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Total
Male	10.7%	1.8%	37.5%	35.7%	14.3%	100%
Female	22.2%	9.7%	37.5%	11.1%	19.4%	100%
MDP						
GEN	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Total
Male	1.8%	21.4%	44.6%	25.0%	7.1%	100%

Female	2.8%	20.8%	36.1%	27.8%	12.5%	100%
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MDR						
GEN	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Total
Male	3.6%	10.7%	48.2%	30.4%	7.1%	100%
Female	2.8%	16.7%	38.9%	33.3%	8.3%	100%

RTM						
GEN	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Total
Male	16.1%	23.2%	21.4%	23.2%	16.1%	100%
Female	8.3%	6.9%	22.2%	19.4%	43.1%	100%

Note. (GEN)= Gender of participant; (SPA)= I am supportive of the homosexual community; (FAM)= My family members are supportive of the homosexual community; (PER)= My friends are supportive of the homosexual community; (SPF)= I would be supportive of a family member or friend who identifies themselves as being homosexual; (RGN)= My religious affiliation teaches that homosexuality is a sin; (SPR)= I support my religious affiliation's perspective on homosexuality; (MDP)= Prime time sitcoms portray homosexuality in a positive manner; (MDR)= Prime time sitcoms show committed homosexual relationships; (RTM)= Homosexuals should have the same rights in society as heterosexuals; (CWH)= Someone close to me is homosexual.

Table 2
Means, Standard Deviations, and Ranges

GEN		SPA	FAM	PER	SPF	RGN	SPR	MDP	MDR	RTM	CWH
Male											
	Mean:	2.71	2.33	2.35	3.46	3.55	3.41	3.14	3.26	3.00	1.92
	SD:	1.13	1.06	1.08	1.04	1.38	1.10	0.90	0.88	1.33	1.30
	Range:	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Female											
	Mean:	3.75	2.76	3.70	4.25	3.45	2.95	3.26	3.27	3.81	3.12
	SD:	1.21	1.10	0.94	0.96	1.44	1.37	1.02	0.93	1.29	1.50
	Range:	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00

Note. (SPA)= I am supportive of the homosexual community; (FAM)= My family members are supportive of the homosexual community; (PER)= My friends are supportive of the homosexual community; (SPF)= I would be supportive of a family member or friend who identifies themselves as being homosexual; (RGN)= My religious affiliation teaches that homosexuality is a sin; (SPR)= I support my religious affiliation's perspective on homosexuality; (MDP)= Prime time sitcoms portray homosexuality in a positive manner; (MDR)= Prime time sitcoms show committed homosexual relationships; (RTM)= Homosexuals should have the same rights in society as heterosexuals; (CWH)= Someone close to me is homosexual.

An independent samples t-test was run to compare mean scores for males and females. There were significant mean differences between the genders regarding variables SPA, FAM, PER, SPF, SPR, RTM, and CWH (refer to Table 3).

Table 3
Results of Mean Comparison T-tests

Variable	Males	Females	t	df	Sig.
SPA	2.71 (1.13)	3.75 (1.21)	-4.905	126	*.000
FAM	2.33 (1.06)	2.76 (1.10)	-2.187	126	*.031
PER	2.35 (1.08)	3.70 (0.94)	-7.532	126	*.000
SPF	3.46 (1.04)	4.25 (0.96)	-4.420	126	*.000
RGN	3.55 (1.38)	3.45 (1.44)	.377	126	.707
SPR	3.41 (1.10)	2.95 (1.37)	2.003	126	*.047
MDP	3.14 (0.90)	3.26 (1.02)	-.699	126	.486
MDR	3.26 (0.88)	3.27 (0.93)	-.061	126	.952
RTM	3.00 (1.33)	3.81 (1.29)	-3.507	126	*.001
CWH	1.92 (1.30)	3.12 (1.50)	-4.801	124,550	*.000

Note. (SPA)= I am supportive of the homosexual community; (FAM)= My family members are supportive of the homosexual community; (PER)= My friends are supportive of the homosexual community; (SPF)= I would be supportive of a family member or friend who identifies themselves as being homosexual; (RGN)= My religious affiliation teaches that homosexuality is a sin; (SPR)= I support my religious affiliation's perspective on homosexuality; (MDP)= Prime time sitcoms portray homosexuality in a positive manner; (MDR)= Prime time sitcoms show committed homosexual relationships; (RTM)= Homosexuals should have the same rights in society as heterosexuals; (CWH)= Someone close to me is homosexual. *significant @ $p < .05$, two tailed. Standard deviations appear in parentheses below means.

A reliability analysis was run to indicate if the variables were a reliable index to measure the major concept:

Factors that influence college students' attitudes towards homosexuality. Cronbach's Alpha is a measure of reliability and was 0.581. This value indicated that survey items were a reliable measure of the major concept; however, if the variable SPR were to be removed, the reliability would rise to 0.717.

Qualitative comments were received at the end of a number of surveys. These comments will be analyzed and themes determined in the Discussion section.

Discussion

Overall, results supported the hypothesis that female college students would be more supportive of homosexuality than male college students; significant mean differences were found in seven out of ten variables ($p < .05$ level). These mean differences were supported in the literature (Verweij et al, 2008; Raiz, 2006). Each dependent variable will be discussed in terms of how the results were supported in the literature and /or through the theoretical framework. Thereafter, limitations to the study, implications for practitioners, implications for future research, and concluding remarks will be discussed.

Interestingly, results showed that more female respondents overwhelmingly agreed that they were supportive of the homosexual community than males. The literature supports this concept that females are more accepting of homosexuality than males (Verweij et al, 2008; Raiz, 2006). A significant mean difference was found between females and males; overall more females stated that they were supportive of the homosexual community and they believed that homosexual individuals should have the same rights in society as heterosexual individuals, such as the right to marry; this corresponds with the majority of females having more overall contact with homosexual individuals. There were no distinct differences in how both males and females responded regarding homosexuality and the media. Researchers believed this was due to the term

media being too broad of a concept although supporting literature suggested that media does play a role in developing attitudes (Calzo & Ward, 2009). This finding suggested that a more comprehensive look at exactly what media is being consumed by participants and how much would give a better insight as to how the media influences an individuals' perception of homosexuality. A majority of both male and female respondents agreed that their religious affiliation teaches that homosexuality is a sin, and surprisingly when it came to stating whether or not they supported their religious affiliation's perspective on homosexuality, over one third of all respondents were undecided. Even though a participant may state their religious affiliation, it does not mean they are actively involved or supportive of all of the religion's philosophies. Literature did not make a distinction between males and females regarding religious practices. (Olson et al., 2006; Raiz, 2006). There were no significant differences between males and females regarding their belief that their family was supportive of the homosexual community; there were equitable numbers of disagree, undecided and agree for both males and females. On the other hand, there was more agreement seen among females than males regarding their belief that their friends were supportive of the homosexual community. This supports the literature that peer perceptions may play a part in the development of attitudes towards homosexuality. However, results may somewhat contradict the idea that family may have a strong influence on an individual's beliefs towards homosexuality, since there was no significant difference between males and females regarding the belief that their family was supportive of the homosexual community, with males and females both ranging from strongly disagree to strongly agree at roughly the same percentage (Raiz, 2006; Verweij et al., 2008). The literature did not state whether or not there would be a difference between males and females regarding their family or their level of religiosity but there were significant

differences found for both in this study. Although there were equitable numbers of males and females that were undecided for both of these variables, a higher percentage of females viewed their family as being supportive of the homosexual community than did males, and a higher percentage of males than females supported their religious affiliation's stance on homosexuality.

Regarding the survey statement that someone close to me is homosexual, the majority of males disagreed while the majority of females agreed or strongly agreed. This finding could relate back to the Family Ecology Theory (Bretherton, 1993) in that the macrosystem in American society, in intangible ways, promotes males to reject homosexuality. This homophobic ideology subsequently alters a male participant's exosystem, thus ultimately affecting their mesosystem and microsystem. This may result in fewer interactions with homosexual individuals. A similar experience can be seen for females. Since females have been discriminated and oppressed by the macrosystem in American society, they may be more understanding and accepting of the homosexual community that is experiencing many of the same discriminations that women once faced. This difference could be associated with the rigid gender roles and stereotypes that are illustrated in the cultural layer of this theory.

Limitations

This study used a nonrandom sample and therefore it is unable to be generalized and compared to the larger population of all college students.

Implications for Practitioners

The results showed that there is a need for scholars and professionals who research homosexuality to take gender into account regarding the factors that influence a college student's attitude towards homosexuality. Researchers recommend that male college students be provided with additional sensitivity

education and awareness training towards homosexuals in hopes that exposure to the problems of homophobia can prevent acts of hate and/or discrimination. Students, starting at an early age, can benefit immensely by learning acceptance and compassion and these teaching's could potentially help shape their attitudes towards homosexuality. This can be conveyed to researchers, teaching professionals, counselors, LGBT support groups and parenting classes. It is essential that a student of any educational level has the option to seek support or information from parent's or professionals regarding homosexuality. Specialized training needs to be provided for professionals such as counselors and teaching professionals, who may work or come in contact with a homosexual person.

Implications for Future Research

It is recommended that the next step of research is to use a larger, random, and more diverse sample to be able to generalize to college students across the country. Another implication for future research would be to include qualitative interviews with participants and to focus more on family and religion in the development of student's attitudes regarding homosexuality. If this study were to be replicated, the rewording or discarding of the variable (SPR) would be suggested: I support my religious affiliation's perspective on homosexuality. According to the reliability statistics, Cronbach's Alpha would increase from .581 to .717 if this statement were taken out of the survey. This may be due to confusion concerning the wording of the statement.

Conclusion

As a result of this study, it is hoped that gender differences will be recognized as a significant factor regarding student's attitudes towards homosexuality and how these attitudes are formed. The researchers hope that more professionals will recognize and be sensitive to the

importance of student's perceptions towards homosexuality. Homophobia and discrimination towards homosexual individuals is apparent in our society, even in highly educated individuals. Results showed that there are five significant mean differences out of the ten variables tested. This suggests that there is a significant difference between gender and attitudes toward homosexuality. Researchers hope sensitivity education and awareness training is provided, especially for male students. The researchers hope that providing these additional resources to students can increase awareness and reduce homophobic attitudes. Resources should not only be provided at the college and high school level but also throughout the entire educational experience.

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Parental Assimilation of Internationally Adopted Children

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Key Words: international adoption, assimilation, adoptive
parents

Abstract

International adoption has been increasing in the United States since the 1970's (Grotevant, Gunnar, Hellerstedt, Johnson, Lee, & Madsen, 2007). The purpose of this exploratory pilot study was to examine the attitudes of parents who have adopted internationally through a Midwestern adoption agency. The central research question was "What are the attitudes of parents as they assimilate their internationally adopted child?" The researchers predicted that parents would be open to discussing issues that promote positive ethnic identity. It was also hypothesized that adoptive parents would respond positively to receiving useful cultural resources from their adoption agencies. There was a 27% return rate, resulting in nine study participants. Survey data was statistically analyzed using frequencies and mean comparisons. Significance testing as well as reliability were not conducted due to the small sample size. Overall, findings supported the hypotheses; qualitative comments were analyzed. Implications for practitioners include providing access to parents of useful cultural resources. Implications for future research would be to obtain a larger sample.

Introduction

International adoption has been steadily increasing in the United States since the 1970's (Grotevant et al.,

2007). These adoptions involve children who were born in a country other than where the adoptive parents reside or are citizens of a country other than where the adoptive parents live (Adoption.com, 2009). Since the 1990s, there has been a threefold increase in the annual rate of children adopted from abroad, from 7,093 children in 1990 to 22,884 children in 2004 (The Minnesota Adoption Project Team, 2006). Americans adopt children ranging in age from infancy to early adolescence from more than 100 different countries, although the majority of children come from just six countries, including: China, Russia, South Korea, Guatemala, Ukraine, and Romania (Kenney, Kubo, Ishizawa, & Stevens, 2006). As international adoption continues to become an increasingly popular means of forming a family in the United States, societal influences in the current environment will greatly impact how parents choose to nurture their adopted child. The different strategies parents employ while assimilating their child to a new surrounding holds deterministic value to the child's individual development. Assimilation refers to: "the merging of cultural traits from previously distinct cultural groups..." (Random House Dictionary, 2009). Research suggested that parents who were aware of the importance of racial differences in today's society were more likely to have provided cultural opportunities that promoted positive ethnic identity development for their child (Grotevant et al., 2007). Additionally, when resources such as post-adoption services and public support met the needs of parents, the overall well-being of the family increased (Anderson, 2005). Are there enough resources, however, to assure a smooth transition and healthy adaption for parents and their child in the full adoption process? What are the perspectives of parents as they move through the course of accommodating an additional member to the family? To further investigate these questions, the researchers reviewed current literature on international adoption and surveyed attitudes of adoptive parents at one Midwestern adoption

agency as they assimilated their internationally adopted child into the U.S. culture.

Literature Review

A review of the most current literature on international adoption was conducted through the research database service, EBSCOhost. A large focus of the literature was directed towards developmental risks of internationally adopted children such as malnutrition in population-specific regions. One population-based survey of parents who adopted children from countries outside the United States was found. Much of the literature focused on the process of international adoption in China and Africa, two of the most popular regions from which American couples adopt children. Overall, there was a gap in the literature on specific parenting behaviors for internationally adopted children. Besides the recognition of health and medical needs of children, the authors of the studies focused on variables such as cultural socialization, roles of race and ethnicity, and post-adoption services (Grotevant et al., 2007; Ishizawa et al., 2006; Minnesota International Adoption Team, 2006; Anderson, 2005).

Grotevant et al. (2007) conducted the International Adoption Project, the first population-based survey in the United States of parents who adopted children from countries outside the United States. Surveys were mailed to 2,977 parents who finalized their international adoption in Minnesota between the dates of January 1990 and December 1998. A response rate of 62% yielded the following results; 88% of parents who adopted internationally reported transracial adoptions. Emerging trends related to factors such as the age and sex of the adopted child, as well as the income and education levels of the adoptive parents. Findings showed that parents with higher education were more likely to adopt internationally than were parents with a high school diploma. Respondents to the International Adoption Project

survey were overwhelmingly white, college-educated, and financially secure. Because the percentage of adoptions in the U.S. that were international rose dramatically in the last decade, it is important to understand the composition, concerns, and strengths of transracial families that are often created through unique forms of migration.

Ishizawa et al., (2006) analyzed the role of race and ethnicity in constructing American families through intercountry adoption. The findings indicated that minority-race parents were more likely than white parents to adopt a child of the same race as themselves. For example, an Asian-American couple would be more likely to adopt a child from China than they would from Russia. In addition, the probability of white parents adopting a white versus nonwhite child from abroad depended on various factors, such as age, sex, health status of the child, and the presence of other children in the household. Parents' levels of education were also related to whether their adopted child was of the same race or ethnicity as themselves. White American parents with college degrees were more likely to adopt Asian or Hispanic children than were parents with some or no college experience. Overall, the findings of this study showed that American parents who adopt children from abroad are primarily white, well-educated, and middle class.

The Minnesota International Adoption Team (2006) focused their study on the cultural socialization in families with internationally adopted children. Through an analysis of variance of three components, including age, sex, and racial/ethnic status of the child, the following results were discovered: parents with lower color-blind racial attitudes were more likely to have their children participate in cultural activities, to participate in post-adoption support groups themselves, to speak with their children by talking to them about racism and discrimination in school, and were more likely to speak with teachers about their children's adoptive history. Parents engaging in these initiatives and utilizing

these resources also held stronger beliefs in the value and significance of enculturation and racialization. Because most adoption agencies do not mandate pre- and post-adoption services and emphasize resources for adopted children more than adoptive parents, this study helps to inform clinical practice and adoption policy.

Anderson (2005) focused her study on post-adoption services to families who have adopted children that are considered high risk, which includes the child being over the age of three, multiple sibling groups, transracial adoptions, children diagnosed with special learning, mental health, emotional or medical/physical need and/or multiple foster placements. The study was intended to describe parents' demographic characteristics, as well as assess the different perceptions and experiences of post-adoption services between mothers and fathers. Anderson used an assessment tool developed by the Pennsylvania Adoption Connections Program staff to evaluate 182 participants currently using post-adoption services. Results showed that all adoptive families, regardless of how long ago the adoption occurred, acknowledged similar needs of services and support. Evidence pointed out that meeting the adopted child's special needs increased the child's overall well-being and therefore increased parent-child attachment, decreasing the chance of disruption. Because there were no significant differences found between the responses of mothers and fathers, this study indicated that previous studies focusing only on mothers experiences could also be applied to fathers as well.

Parents who use post-adoption services and integrate the child's native culture into the child's upbringing are preparing their children for a world of diversity where it is important to develop a strong sense of ethnic identity and cultural competence. Studies have shown that internationally adopted children, as well as their parents, benefit from the use of post-adoption services, The question left to ponder is,

do children and parents feel they are getting enough? What current research fails to provide is the parents' viewpoints on whether or not they are receiving the needed services to the extent that they wish to receive them. The current study is going to address this question by observing the attitudes and concerns of parents with internationally adopted children. When the study is complete, our findings will be able to provide agencies that offer post-adoption services information on how they could improve their services and better meet the needs of their clients.

Theoretical Framework

This study applied the Family Ecological Theory framework (Strong, DeVault, & Cohen, 2005; Bronfenbrenner, 1979). The Family Ecological Theory assumes the environment plays a major role and heavily influences families. A family will be impacted by many outside sources in the environment and will try to adapt to their surroundings. Four different levels of environmental contexts reflect multiple environments that families are influenced by. These four levels consist of the microsystem: immediate environment; the mesosystem: the connection between the microsystems; the exosystem: the environment that affects the individual indirectly; and the macrosystem: the wider society that impacts the behavior settings in which a family functions on a daily basis.

The application of the Family Ecological Theory to this study would foresee the difference in the range of attitudes in parents as they attempt to assimilate their internationally adopted child into a new surrounding culture. The different approaches parents take in accommodating their child or children will affect their individual development in the United States. The Family Ecological Theory would help to explain the varying attitudes of parents and the steps they take in orienting their child in new surroundings. Another prediction according to this theory would include the larger

macrosystem and how it influences the feelings parents have towards the process of nurturing the unique cultural needs of their child. Along with this prediction, the levels of cultural sensitivity in society at large would have an impact on the future of internationally adopted children's reality.

Purpose Statement

The purpose of this study was threefold: (1) to examine the attitudes of parents who have adopted internationally through a Midwestern adoption agency, (2) to develop a reliable survey instrument to measure the effectiveness of services and programs that have assisted in the process of assimilation, and, (3) to provide data to help support the already established adoption resources made available through various agencies. The authors found a similar study that examined the effectiveness of post-adoption services to families who have adopted children that are considered high risk, which includes transracial adoptions (Anderson, 2005). The Minnesota Adoption Team (2006) reported that parents who utilized resources from adoption agencies held stronger beliefs in the value and significance of enculturation and racialization.

The central research question in this study was "What are the attitudes of parents as they assimilate their internationally adopted child into U.S. culture?" The authors predicted that parents who were more open to discussing issues that promote positive ethnic identity would be more likely to participate in post-adoption services and resources. It was hypothesized that adoptive parents will report having an overall higher sense of family well-being as the process of assimilation occurs. As for the adoptive parents that have not participated in post-adoption services, their children may experience feelings surrounding the loss of birth culture, family history, and coping mechanisms of how to face racism and discrimination in their daily lives (The Minnesota Adoption Team, 2006). The authors' hypothesis

was informed by the literature that was reviewed which consistently reported a relationship between post-adoption services and family well-being. This hypothesis is also supported by the Family Ecology Theory that observes a relationship between a child's development and the context of their environment.

Method

Participants

The site of data collection for this study was a Midwestern adoption agency. The participants were nine parents that have previously adopted internationally. Of these nine, three of the participants were male and six were female. There were two participants between the ages of 30-41, six between the ages of 42-53, and the remaining participant was between the ages of 54-65. There were eight parents of White/Caucasian ethnicity, and one of Canadian ethnicity. Two children were adopted from Mongolia, two from China, three from the Philippines, and two from Russia. There were two children of Mongolian ethnicity, two of Chinese ethnicity, two of Filipino ethnicity, one of Asian ethnicity, one of White ethnicity, and one of Russian/Tartar ethnicity.

Research Design

The purpose of this survey research was to collect findings of a small population-based sample and project these findings onto a similar, larger population so that some implications could be made about attitudes, behaviors, and characteristics of this population (Babbie, 1990). Current attitudes from our sample population were identified to generalize about a larger population of similar parents who have adopted internationally. The survey design type is best described as a cross-sectional study design in that it was used to capture knowledge about attitudes from a cross section of the population at one point in time. The researchers administered online questionnaires through Qualtrics to the

participants. The rationale for using this method was that it was the most effective method to gather data from our study sample due to the off campus location. This method was most convenient because of the fast pace of our research course, low cost, and the quick return of data. The population was families who have adopted a child internationally; the sample was parents that have adopted internationally through a specific Midwestern adoption agency. The study used a non-random purposive sample design, because the purpose was to collect information from parents who have previously adopted a child internationally. Randomization was not used in order to be able to fulfill the sample number in a limited time period. The ethical protection of human subjects was provided by completing the Human Subjects Institutional Review Board (IRB) training; this study has been approved by the IRB.

Data Collection Instrument

In order to address the attitudes of parents regarding assimilation of their internationally adopted child, a survey was designed through Qualtrics online survey software. The survey included an email invitation with an implied consent which included a description of the study, definition of any terms not commonly known, risks and benefits, time commitment, confidentiality, voluntary participation, and contact information of the research team and the supervisor as well as instructions for completing the survey.

The survey consisted of five demographic questions relating to gender, age, race, and adopted child's country of origin and racial background. Participants were then given ten closed-ended statements based on a 5-point Likert scale which measured the intensity of the respondents' attitudes ranging from one (strongly disagree) to five (strongly agree). Two open-ended questions were provided at the end of the survey. The researchers analyzed this qualitative data through attempting to identify any patterns or themes that

emerged from the participants themselves (McIntyre, 2005). Participants were able to record recommendations for their adoption agency and any other pertinent information that they wanted to include. Questions were informed by literature and theory regarding what factors related to attitudes concerning assimilation of their internationally adopted child.

The survey instrument has both face validity and content validity. Face validity refers to the instrument questions having a logical connection to the concept and research question. Because the questions and concepts addressed in the survey are literature-inspired, it was determined that they are clearly connected to the larger problem of difficulties with assimilation to a new culture. Content validity refers to the instrument statements' coverage of the full range of concepts under the larger topic. The questions addressed a broad range of issues regarding parental attitudes towards assimilation of their internationally adopted child. To increase validity, the survey was piloted to four sets of parents. Feedback indicated that the survey was clear and ready for distribution.

Procedure

To collect the data for this study, parents were sent a link via email enabling them to take the survey anytime between November 4, 2009 and November 17, 2009. The purposive sampling design led the researchers to this specific Midwestern agency where international adoption takes place. Parents were sent an email that included an invitation letter, an attached informed consent, and a URL address that took them directly to the survey. Participants were able to take the survey from the comfort of their own home or in a place of their choice where Internet access was available. Before beginning the survey, participants were provided with a screen giving them the option to continue on with the survey or exit out of the screen if they did not want to participate. Randomization was not used in order to obtain the sample

number targeted given the limited time to collect data. The implied consent was presented for participants to read online before they engaged in the survey. In order to maintain the strict confidentiality, no identifying characteristics were made available to the researchers. After participants read the informed consent, they were then able to take the survey. When all surveys were completed, the findings of the survey were made available to the researchers via an online secured survey instrument. In order to assure confidentiality and to reduce any potential pressure of participants, the agency was not able to access participants' answers. When the surveys were collected electronically, they were secured by the online survey instrument, Qualtrics, and could only be accessed by the researchers through a user name and password.

Data Analysis Plan

The data was first cleaned and checked for any missing data. The cleaned surveys were then coded using acronyms for each variable. Acronyms were ascribed by using the first letter of the first word of each variable. The following two letters of the associated acronyms were randomly chosen within the variable. The first five questions on the survey were demographic variables, including: gender, age, race, and adopted child's country of origin and racial background. Each survey statement was a dependent variable and given an acronym name: To determine if parents participated in at least one cultural event in the past year (*CPT*), if parents participated in post-adoption support groups (*SIV*), the degree to which parents felt confident in talking with their child about potential discrimination (*CMD*), the degree to which parents felt confident in teaching their child appropriate ways to cope with discrimination if it occurred (*COM*), if the internationally adopted child was educated on cultural norms of his/her country of origin (*CNS*), if parents felt association with social norms of U.S. culture was important for their child (*SON*), if parents integrated

their child's culture of origin into their daily lives (CIN), if parents felt sharing the adoptive history of their child with his/her teacher was important (TIV), if parents felt sharing the adoptive history of their child with his/her classmates was important (CII), and if parents received useful cultural resources from their adoption agency (SSF).

To analyze the data, the computer program called *Statistical Package for the Social Sciences (SPSS)*, was used. Each participant was used as the level of analysis. Given that our study was descriptive, data analysis included: frequencies and mean comparisons. Significance testing as well as reliability was not performed due to the small and nonrandom pilot study sample.

Results

The researchers utilized the computer program *Statistical Package for the Social Sciences (SPSS)* to analyze the data that was collected. The statistical analyses that variables were subjected to included: frequency distribution and a reliability analysis.

Surveys were distributed on-line to 30 adoptive parents. Twenty seven percent of these parents responded. All variables were subjected to frequency distribution analysis. Results indicated that there was no missing data. For variables (*CPT*) and (*SIV*), the majority of respondents agreed and/or strongly agreed that they had participated in at least one cultural event in the past year as well as post-adoption support groups that had helped them in the parenting of their internationally adopted child. For the variables (*CMD*) and (*COM*), the majority of respondents stated that they felt confident with talking to their child about potential discrimination and teaching him or her appropriate ways of coping with this discrimination if it occurred. For the variables (*CNS*) and (*SON*), the respondents agreed that not only was their child educated on the cultural norms of their country or origin, but also felt that it was important for their child to

be associated with the social norms of current U.S. culture. For the variable (*CIN*), the majority of participants agreed or strongly agreed that they had integrated their child's country and culture of origin into their daily lives. For variable (*TIV*), the majority of participants agreed that it would be important to share their child's adoptive history with his or her teacher. For variable (*CII*), the majority of participants were undecided or disagreed as to whether they felt it was important to share their child's adoptive history with his or her classmates. The researchers discussed possibilities as to why participants were undecided. One possibility is that parents may be sensitive to their child being recognized as different from their peers. For variable (*SSF*), results ranged from "agree" to "disagree," with the majority of participants disagreeing that they had received useful cultural resources from their adoption agencies to help facilitate their child's connection to his/her culture of origin (refer to Table 1 for Frequency Distribution Analysis and Table 2 for Mean Comparisons).

Table 1
Frequency Distribution

	SD	D	U	A	SA	Total
CPT	11.0%	0.0%	11.0%	44.0%	33.0%	100.0%
SIV	11.0%	11.0%	0.0%	67.0%	11.0%	100.0%
CMD	0.0%	0.0%	22.0%	56.0%	22.0%	100.0%
COM	0.0%	0.0%	11.0%	67.0%	22.0%	100.0%
CNS	0.0%	0.0%	33.0%	67.0%	0.0%	100.0%
SON	0.0%	0.0%	0.0%	89.0%	11.0%	100.0%
CIN	0.0%	22.0%	11.0%	56.0%	11.0%	100.0%
TIV	11.0%	11.0%	11.0%	56.0%	11.0%	100.0%
CII	11.0%	33.0%	33.0%	22.0%	0.0%	100.0%
SSF	0.0%	56.0%	11.0%	33.0%	0.0%	100.0%

Note. (CPT)=Participation in at least one cultural event in past year; (SIV)=Participation in post-adoption support groups; (CMD)=Confidence in talking about potential discrimination; (COM)=Confidence in teaching coping methods for potential discrimination; (CNS)=Education surrounding cultural norms; (SON)=Importance of association with U.S. culture; (CIN)=Integration of child's culture; (TIV)=Importance of sharing adoptive history with teacher; (CII)=Importance of sharing adoptive history with classmates; (SSF)=Received useful resources from agency.

Table 2
Compare Means

	CPT	SIV	CMD	COM	CNS	SON	CIN	TIV	CII	SSF
Mean:	3.89	3.56	4.00	4.11	3.67	4.11	3.56	3.44	2.67	2.78
SD:	1.27	1.24	0.71	0.60	0.50	0.33	1.01	1.24	1.00	0.97
Range:	4.00	4.00	2.00	2.00	1.00	1.00	3.00	4.00	3.00	2.00

Note. (CPT)=Participation in at least one cultural event in past year; (SIV)=Participation in post-adoption support groups; (CMD)=Confidence in talking about potential discrimination; (COM)=Confidence in teaching coping methods for potential discrimination; (CNS)=Education surrounding cultural norms; (SON)=Importance of association with U.S. culture; (CIN)=Integration of child’s culture; (TIV)=Importance of sharing adoptive history with teacher; (CII)=Importance of sharing adoptive history with classmates; (SSF)=Received useful resources from agency.

Qualitative comments were received at the end of a number of our surveys. These comments will be analyzed and themes determined in the Discussion section.

Discussion

Overall, results supported the hypothesis that adoptive parents would respond positively to receiving useful cultural resources from their adoption agencies. These findings were supported in the literature (Grotevant et al., 2007; Ishizawa et al., 2006; The Minnesota International Adoption Team, 2006; Anderson, 2005; Strong et al., 2005). Each dependent variable will be discussed in terms of how the results were supported in the literature and /or through the theoretical framework. Thereafter, limitations to the study, implications for practitioners, implications for future research, and concluding remarks will be discussed.

Interestingly, results showed that some respondents disagreed that they had integrated their child’s country and culture of origin into their daily lives, regardless of how important they felt educating their child on the cultural norms of their country of origin was. According to Grotevant, et al. some adoptive parents may not even find it necessary to teach their child values and beliefs of his or her birth culture (2007). A majority of respondents in our study agreed, however, that their child had participated in at least one cultural event in the past year in support of the literature which stated that

parents with children who are considered racial and ethnic minorities in the United States are more likely to engage in cultural socialization practices (The Minnesota International Adoption Team, 2006). There seemed to be a considerable amount of agreement among parents who had participated in post-adoption support groups who felt that their parenting had been empowered by the assistance these groups provided. The Minnesota International Adoption Team states, however, that parents who engage in cultural socialization behaviors were actually less likely to have participated in post-adoption support groups (2006). The next two survey statements were regarding parents' degrees of confidence that they were able to confront the topic of discrimination with their child and, henceforth, teach them appropriate coping methods if they granted it necessary. The majority of parents agreed to both statements, indicating that they felt confident in their ability to combat potential racism in a society where racial and ethnic discrimination is persistent, according to Grotevant (2007). Parents overwhelmingly agreed that it is important for their child to be associated with the social norms and standards of current U.S. culture. The Minnesota International Adoption Team found that parents reflect their own cultural biases onto their adopted child, indicating that parents who felt that association with U.S. culture is important, are also the parents who are imposing cultural norms onto their child already (2006). Overall, the researchers found that parents felt that the sharing of their child's adoptive history was more important for the child's teacher than it was for the child's classmates. According to the Minnesota Adoption Team, parents that spoke with teachers about their child's adoption history held stronger beliefs in the value and importance of maintaining ties with their child's country of origin (2006). The concluding survey statement elicited parental response to whether or not parents had received useful cultural resources to facilitate their child's connection to his or her birth culture. According to Anderson, unmet

needs of parents and their adopted child can result in more negative impacts on the overall family well-being (2005). Anderson also states that meeting the adopted child's needs will increase the child's overall well-being and stabilize the bond between parent and child, resulting in decreased likelihood of disturbance through the process of assimilation (2005).

Although most parents agreed that their child was educated on the cultural norms of their country of origin (i.e. language, food, clothing, etc.), there were three respondents who were undecided about this survey statement. The researchers contemplated why some participants would respond in this manner, concluding that some parents may have underestimated their active role in incorporating cultural norms of their child's birth culture. According to the Family Ecological Theory, parents take different approaches in accommodating their child regarding cultural socialization practices, which is why some parents may have responded to the latter survey statement undecidedly (Strong et al., 2005).

The survey included two qualitative, open-ended questions that gave parents the option of including their personal comments. The first question asked parents for recommendations they would give their adoption agency about incorporating aspects of their child's cultural heritage into their daily family life. Of the participants that responded, half responded in a way that pointed out the need for additional resources. Participants requested that their adoption agency should have offered more information to parents about their adopted child's country of origin and ethnic background. One parent pointed out that most of what they had found about their child's birth culture was done on their own and that letting families know what resources are available to them in their communities would be quite helpful. The remaining half of the participants that commented suggested that they would rather take matters into their own hands. The second question asked parents if there was anything else that they

would like the researchers to know regarding their adoption experience. Responses included topics such as adopted children choosing not to stay connected to their birth culture, having one parent with the same ethnic background as the child, and recognizing issues that the child may experience in the future due to complications that may have taken place before adoption. These responses supported the researcher's hypothesis in that the majority of parents suggested that if they received more useful cultural resources from their adoption agency, the adoption process would be made easier.

Limitations

This study was an exploratory nonrandom pilot and therefore was unable to generalize and compare to the larger population of adoptive families. Significance testing as well as reliability was not completed because of the small sample size. Also, being the first student users in this research class of the Qualtrics online survey system, the researchers encountered complications that resulted in a small sample size.

Implications for Practitioners

The results showed that there is a need to provide adoptive parents with adequate resources that will aid them in assimilation processes. These findings can be disseminated to adoption agency employees, social workers, family life educators, and all other professionals who work with adoptive families. Parents can also be assisted with finding helpful information on their adopted child's birth country that will help them in their parenting strategies towards achievement of assimilation. Parents need to prepare in advance for how they will integrate their child's birth culture into their current life, as well as how they will prepare their children for any potential discrimination that may prevail. Parents need to be provided with information and resources early on in the adoption process in order to prepare them for what is to come. There needs to

be specialized training for professionals working in adoption agencies so that they can provide clients with the appropriate cultural information. The specialized training specific to international adoption is important because without a sense of knowing one's cultural background, adopted children may grow up feeling like they are missing a piece of themselves and their history.

Implications for Future Research

It is recommended that if this study were to be replicated that a larger, random, and more racially diverse sample be used to be able to generalize to adoptive families across the country.

The authors also recommend that the next step of research be to use qualitative interviews with the adoptive parents to be able to go into greater depth regarding their experiences with assimilation.

Conclusion

As a result of this study, it is hoped that adoption agencies will create a system to better enable parents to assure a smooth transition through the international adoption process. Agencies should recognize the importance of providing their clients with relevant information that speaks to their child's birth country before, during, and after the adoption process. Action needs to be taken to gain a better knowledge of how adopted children can attain and improve their positive ethnic identity while at the same time maintaining a link to their birth culture.

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The following research paper is different from those the *Journal* has published in the past. It is a research essay that probes the historical meaning of the African-American celebration of “Jubilee.” It pushes the reader to re-examine the usual White interpretation of the Civil War and other civil rights events.

This is one type of social science and humanities research. Overall, such research critically analyzes human social life and expression using qualitative and quantitative methods. The studies posit original arguments, question commonplace assumptions, and draw unique conclusions. The conclusions are used to better understand the human condition past and present, to plan and execute public policy, to cultivate an aesthetic sensibility, and, in general, to give more control to people throughout the world over their lives.

The structure of humanities and social science research papers can vary but, in general, researchers set forth a thesis statement that defines a question relevant to the particular field of study and to advancing knowledge. Researchers examine and analyze appropriate primary evidence and/or theory using logic and reason. We draw conclusions that tie the thesis to the analysis of the evidence and its application to the world today. These studies use the Chicago, Turabian, or MLA style citations.

This type of research draws on a history of critical analysis and an engagement in public debate that has stood at the heart of democracies for 2500 years beginning with Socrates’ concept of the examined life and Aristotle’s reflective citizenship. Social Science and humanities research is an intellectual engagement essential for democracies because it provides researchers and the readers of the research with the tools necessary to enter into increasingly sophisticated conversations over the complex issues in our modern world. It is “hands-on, minds-on” research at its core.

We hope you enjoy the following study and we look forward to receiving more such submissions for future journals.

African-American Jubilee: A Recurring Fifty-Year Rejuvenation

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Abstract

Jubilee is an occurrence known and celebrated by many different cultures and religions. It is also an African-American interpretation of the era directly after the Civil War, based on the common biblical interpretation of Leviticus 25:9-10. By examining civil rights primary documents every forty to fifty years from the Civil War to present day, Jubilee, or the idea of forgiveness and hope, is continually carried through. These documents from such famous figures as W.E.B. Dubois after the turn of the twentieth century in his book *The Souls of Black Folk* and moving speeches from Dr. Martin Luther King Jr. during the Civil Rights Movement show the importance of civil rights in their time period, and overtime, how the meaning of Jubilee evolved into a sign of progress for all. Jubilee is not just something of the past, but it is still continuing on today, transcending the color line, evolving into an American Jubilee.

Introduction

Jubilee is an occasion known and celebrated by many different cultures and religions on fifty-year anniversaries. It comes from the Bible. In Leviticus 25:9-10, it says that every fifty years, “[C]ause the trumpet of Jubilee to sound.... Proclaim liberty throughout all the land... it shall be Jubilee for you and you shall return every man into his own possession and you shall return every man back to his family.”¹ Then the Bible passage goes on to detail forgiveness of debts and land redistribution. In the United States, Frederick Douglass

first used the term to emphasize his message in his speech, "The Meaning of July Fourth for the Negro." He said "God speed the year of jubilee...when from their galling chains set free...to man his plundered rights again restore."² He was talking about how African-Americans were looking forward to their year of Jubilee when all slaves would be set free. African-Americans first celebrated Jubilee on "Emancipation Day," or "Jubilation Day," June 19, 1865, the day that federal troops came to report that the slaves were freed.³ Besides just their physical freedom, African-Americans interpreted this Bible passage as meaning that they would receive what was rightfully theirs, that finally there would be equality with Jubilee being a representation of hope and forgiveness. Looking back more closely, using primary historical evidence, Jubilee can be applied to more than just the freed slaves after the Civil War. From the time of the end of the Civil War in 1865 until present day, about every forty to fifty years, the southern African-American community has experienced some form of Jubilee.

Right after the end of the Civil War, America moved into an era called Reconstruction. It lasted from 1865 to 1877 and was a period of rebuilding for much of America, especially the South. A way to understand this time period from an African-American point of view is through the first-hand account by J.T. Trowbridge. He was a famous American author who wrote many novels, juvenile tales, and worked under the pseudonym Paul Creyton. One of his works, "The President...Seemed to Forget" in his book *The South*, was published after the Civil War in 1866. During his trip to the South, he saw a village of several ex-slaves, or Freedmen, after they had received their land allotments. They had received them through the Southern Homestead Act. This Act confiscated the land of previous slave plantation owners and divided it into forty-acre plots. Freedmen were given one of these forty-acre plots where they had to pay six percent of its

value every year, live on it, and farm it for three years before they could receive title. Trowbridge described the village:

I found it a thrifty village, occupied chiefly by freedmen... A sash-factory and blacksmith's shop, shoemakers' shops and stores, enlivened the streets. The business of the place was carried on chiefly by freedmen, many of whom were becoming wealthy, and paying heavy taxes to the government. Every house had its wood-pile, poultry and pigs, and little garden devoted to corn and vegetables. Many a one had its stable and cow, and horse and cart. The village was surrounded by freedmen's farms, occupying the abandoned plantations of recent Rebels [Confederates]. The crops looked well, though the soil was said to be poor. Indeed, this was by far the thriftiest portion of Virginia I had seen.⁴

This description of what the ex-slaves received after the end of the Civil War is exactly what Jubilee is all about. Freedom was what the ex-slaves wanted and expected after the end of the war to escape so many of the injustices of slavery. After the war, with the Emancipation Proclamation, the slaves were freed, and with the Southern Homestead Act, the land was re-distributed, which was so important to them: land, labor, and freedom. This is an example that shows the beginning of Jubilee in modern United States history.

The turn of the twentieth century was also a pivotal time period for the southern African-American community. One famous leader and Progressive reformer during this time period was W.E.B. DuBois. During his lifetime he was the founder of the National Association for the Advancement of Colored People (NAACP) and the editor of its magazine *The Crisis*. In 1903, he wrote the book *The Souls of Black Folk* explaining his dissatisfaction with the economic

policies of Booker T. Washington. This book was aimed at the southern African-American community. It pointed out the flaws in Washington's teachings, namely wanting African-Americans to give up, at least for the time being, three things: first, political authority; second, persistence on civil rights; and lastly, higher education for "Negro youth." Instead, Washington wanted African-Americans to focus their efforts on industrial education, the accumulation of wealth, and the conciliation of the South. Dubois argued instead for higher education for "Negro youth" and for equal civil rights for all African-Americans. He felt that Washington did not value the privilege and right of voting but rather belittled the effects of caste distinctions. This book was crucial because at the time of its publication America had just ended the Spanish American War (which included combat in the Philippines). The aftermath of this war exposed how White Americans had been treating African-Americans because they were now doing the same thing to the people of the Philippines. White Americans questioned if Filipinos had the intellectual and moral capacity to become equal citizens in a democracy because of their dark skin color, questions that White Americans had been asking of African-Americans for so long. Renewed focus on racial oppression through the people of the Philippines brought the long fought battle of African-American civil rights to the fore. The meaning of freedom was different to these two groups of people: African-Americans wanted equal rights and Filipinos wanted to finally have their revolution and national independence, but essentially they both just wanted *their* freedom not to be decided by White Americans. In *The Souls of Black Folk*, DuBois said "By every civilized and peaceful method we must strive for the rights which the world accords to men, clinging unwaveringly to those great words which the sons of the Fathers would fain forget: 'we hold these truths to be self-evident: That all men are

created equal.”⁵ DuBois believed that African-Americans needed to peacefully continue to push for their undeniable rights. At this crucial turn of the century, experiencing a new form of Jubilee about forty years after slaves had been given their freedom, African-Americans in the South were moving forward to equalize their rights. DuBois inspired the African-American community to continue to fight for their political power, civil rights, and higher education for African-American youth, the three things Booker T. Washington was asking them to give up.

To this day, Dr. Martin Luther King Jr. is one of the most famous activists in American history. He was a strong civil rights worker and a member of the executive committee of the NAACP. He became not only the symbolic leader of African-Americans, but also a world figure. At the age of thirty-five, he was awarded the Nobel Peace Prize. The events of the Civil Rights Movement are what Dr. King is most well-known for now. In the South, the majority of the public sector was segregated by signs that said “White” and “Colored,” such as over the entrance to buildings, drinking fountains, train carriages, restrooms, etc. One of the significant acts of the movement was the court case *Brown v. Board of Education*. This case rebutted the Supreme Court case *Plessy v. Ferguson* which had upheld “separate but equal.” The new court case claimed that segregation was inherently unequal because it associated superiority with only one group. This case was a limited doctrine applied to integration in public schools. Another defining moment in the Civil Rights Movement was the result of Rosa Parks and the Montgomery bus boycott she helped to start after she refused to give up her bus seat to a White man. This is the cause that brought Dr. King to give a speech in Montgomery, Alabama, on December 5, 1955. In this speech, Dr. King talked about how the whole situation had been inevitable, but he was glad that it had been raised to the public eye “with

such a fine person as Rosa Parks.”⁶ He said the movement they were starting with their boycott was right, following the non-violent teachings of Jesus. He believed this was their time, a time to stand up for their rights, and in doing so they “injected a new meaning into the veins of history and of civilization.”⁷ At one part in his speech he says, “We, the disinherited of this land, we who have been oppressed so long, are tired of going through the long night of captivity. And now we are reaching out for the daybreak of freedom and justice and equality.”⁸ Dr. King meant that these were their rights –African-American rights– the basic rights that all Americans deserved. The Montgomery bus boycott, which was a boycott of public transportation, lasted 381 days and ended only after the White business community complained about how much it was costing them. Finally, southern African-Americans were gaining their rights about fifty years after the teachings of Dubois. They were on a much more equal level with White Americans, gaining what had always been rightfully theirs. The court decision and the boycott forced the White South to change. Through unity and activism, the African-American community received more equality and hope, another time of Jubilee



Jubilee more fittingly applies to southern segregation, which was more pronounced, than to segregation in the North. In looking at the North, or within a time period less than fifty years, the trends of Jubilee do not apply. For example, this 1960's image represented the military aspect of the Black Power Movement.⁹ It shows the lack of hope northern African-Americans had in the non-violent movement of Dr. King. There are, in black and white, seven young African-American men with afros and sunglasses, dressed in slacks, black leather shoes, and collared jackets, their clothing suggesting military garb. All of the men are standing, with their arms crossed, in front of a doorway, blocking it. They all have stern, focused looks on their faces, and the man on the end appears to be holding a noose. They are all staring straight ahead, appearing to look into a crowd or group in front of them. This image represents the Black Power Movement of the 1960's and 1870's, fathered by Malcolm X. "Black Power" became a rallying cry for those who felt bitter about the government's failed attempt to stop violence against civil rights workers. Eric Foner, an American historian, wrote that "Black Power means Black Freedom... Black Power suggested everything from the election of more black officials to the belief that black Americans were a colonized people whose freedom could only be won through a revolutionary struggle for self-determination."¹⁰ Many of these activists were African-Americans who had moved to the North during the Great Migration between 1910 and 1920, when half a million left the South in search of higher wages and better education during the WWI era. These migrants moved to the large cities and as a result inner-city ghettos were created from Northern segregation policies. In the 1960's ghetto uprisings, African-Americans rioted against White police, especially in the Watts uprising of 1965. Here, in the African-American ghetto of Los Angeles, just days after President Johnson signed the Voting Rights

Act, fifty thousand people took part in the “rebellion” against the police and White-owned businesses in African-American neighborhoods. They were protesting the high African-American unemployment rate. Many Americans feared a racial civil war. During other northern protests in 1966, Dr. King joined the Chicago Freedom Movement to end discrimination by employers and unions, to gain equality in access to mortgages, to integrate public housing, and to construct decent low-income housing in the North. His efforts were not as effective against northern inequality. The Black Power Movement was a defiant stand against Northern inequality that showed activism, but not Jubilee.

Approximately fifty years after the successful protests for civil rights in the South, the African-American community made one of the largest advancements in history with the election of the first African-American President, Barack Obama. On November 4, 2008, 95% of African-American voters voted for Obama. Also in this election, 43% of White voters voted for Obama, 67% of Hispanics; 56% of women, and 49% of men.¹¹ The overall turnout of voters and votes for Obama proved historically significant, illustrating the success of the struggles the African-American population had fought since the time of slavery. To review Obama’s first one hundred days in office, Lou Cannon, a journalist, compared Obama’s plans and ideas to that of previous presidents, especially the fortieth President of the United States, Ronald Reagan.¹² Cannon argued that Reagan reformed the nation’s agenda and political language more than any other president since Franklin Roosevelt. Reagan quickly restored devastated public opinion with an overall approval rating in the 60-68% range, one of the many similarities Reagan and Obama share according to Cannon. They are also similar in that they are practical Presidents, movingly cautiously toward their plans. Their biggest, not as positive, similarity is their “tendency to indulge best-case

economic scenarios.” Reagan never actually gave a balanced budget to Congress and he increased shares of GDP spending to a high of 24.4%, quickly increasing the national debt to \$3 trillion. There are some worries that President Obama might do the same, with the Congressional Budget Office estimating that his spending plans will increase the national debt over the next ten years by an additional \$9.3 trillion. In the end though, their biggest similarity is their overall appeal to the American people. An African-American man becoming President of the United States is one of the greatest examples of Jubilee, of forgiveness and hope, showing how far our society has come.

In conclusion, from the time of Reconstruction in 1865 to the present day, the southern African-American community has experienced a Jubilee about every forty to fifty years. During Reconstruction, Congress abolished slavery and tried to redistribute land with the Southern Homestead Act to give ex-slaves what was rightfully theirs. At the turn of the twentieth century, African-Americans, following the leadership of Dubois and his writings, proved their ability to move forward towards equality. Fifty years later, during one of the most significant moments in African-American civil rights history, Dr. King helped to change southern society drastically. After all of this, American culture reached one of the highest landmarks in 2008, just fifty years after the Civil Rights Movement in the South, with the historic election of the nation’s first African-American President. Before, Jubilee was a basis of African-American hope, but it has now transcended the color line to become an American Jubilee.

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Comparison of Antioxidant Loss During Storage of Freshly-Prepared and Ready-To- Drink Green Tea

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Abstract

Green tea is an important source of antioxidants that can provide protection from cancer and other diseases. Unlike black and oolong, green tea processing does not involve a fermentation stage. Consequently, the antioxidant content of green tea is maintained. The antioxidants in green tea are polyphenols such as catechin, epicatechin, and related compounds. The most important antioxidant in green tea is epigallocatechin gallate (EGCG). Antioxidants are readily degraded by light, heat, and oxygen. Green tea popularity has resulted in a wide variety of commercial products such as bottled, flavored, decaffeinated, and dehydrated teas. Bottled tea is called “ready-to-drink (RTD),” and the number of varieties of this convenient beverage is rapidly increasing. This study was carried out using high performance liquid chromatography (HPLC) to determine caffeine, EGCG, and ascorbic acid in both freshly-prepared herbal and ready-to-drink tea. Samples of either freshly-prepared or RTD products were opened and stored in a refrigerator. Caffeine proved to exhibit no loss during storage. However, ascorbic acid and EGCG were slowly degraded during storage.

Introduction

Green tea is one of most common beverages in the world (Shrubsole et al., 2008). Green tea has many health benefits including antioxidant activity and the prevention of cancer. Recently numerous green tea products, such as green

tea extract chewing gum, toothpaste, shampoo, and body lotion, have been developed. In addition, many flavored green teas have become available. These include lemon, citrus, ginseng, mint, pomegranate, and mango flavor along with decaffeinated, and organic products. Traditional green tea is no longer the only form found in stores (Stauth, 2005). Now flavored tea and other tea products are found on shelves next to bottled beverages and soft drinks. The number of people who now consume or use green tea in one form or another is increasing. Both ready-to-drink (RTD) tea and tea bags are available in regular, flavored, and organic forms. Drinking green tea may reduce breast cancer, decrease the risk of dental caries, and prevent heart disease (Tea Association, 2009).

Green tea has catechins which are known to provide a health benefit due to their role as antioxidants. Catechins are polyphenols, and there are six important catechins found in tea: catechin (C), gallocatechin (GC), epicatechin (EC), epigallocatechin (EGC), epicatechin gallate (ECG), and epigallocatechin gallate (EGCG).

Green tea also contains the methylxanthine stimulants caffeine (Caf) and theobromine (Tb). Green tea may contain added ascorbic acid (AA). Ascorbic acid is commonly known as vitamin C. This study is a comparison of the catechins, ascorbic acid, and caffeine in bottled tea and herbal fresh tea (Yamamoto et al., 1997).

Materials and Methods

Reagents

Ascorbic acid, caffeine, catechin, epicatechin, gallic acid, and epigallocatechin were purchased from Sigma-Aldrich Chemical Company, St. Louis, MO. HPLC-grade acetonitrile and reagent-grade 99% acetic acid were purchased from Fisher Scientific, Fairlawn, New Jersey.

HPLC required a solvent gradient. Solvent A (99.5%

water/0.25% acetic acid) was prepared by diluting 5 mL reagent-grade acetic acid to the mark in a 2-L volumetric flask with Milli-Q water. Solvent B was prepared by measuring 400 mL acetonitrile in a 1000-mL graduated cylinder and diluting to 1000 mL with solvent A.

Stock and Standard Solutions

Caffeine, 1000 mg/L. 1000 mg of the anhydrous solid was diluted to 1.000 L with 50:50 (v/v) methanol-Milli-Q water using a 1000-mL volumetric flask.

Catechin and epicatechin, 1000 mg/L. 100 mg of the anhydrous solids were diluted to 100-mL in separate volumetric flasks with Milli-Q water.

Standard solutions. Standards were prepared by pipetting the stock solutions and by direct weighing of solid AA and EGCG into 25-mL volumetric flasks followed by diluting to the final volume with HPLC-grade Milli-Q water.

Standard Mixtures

Standard mixtures of caffeine, ascorbic acid, catechin, gallic acid, epicatechin, and epigallocatechin, were prepared by adding appropriate volumes of stock solutions to 100-mL volumetric flasks and diluting to the mark with Milli-Q water. Due to the high expense of the polyphenol EGCG, milligram quantities were measured into 25-mL volumetric flasks in amounts appropriate to the desired concentrations. Similarly, milligram quantities of AA were directly measured into the 25-mL volumetric flasks due to the shelf life and instability of ascorbic acid stock solutions. Standard mixtures were used to fill these flasks to the 25-mL mark. By this technique, the concentration of caffeine, catechin, and epicatechin remained unchanged, and the concentration of AA and EGCG could be calculated from the dilution. A chromatogram of a standard mixture is shown in Figure 1 and standard curves for the polyphenols are shown in Figure 2 (Ondrus, 2008).

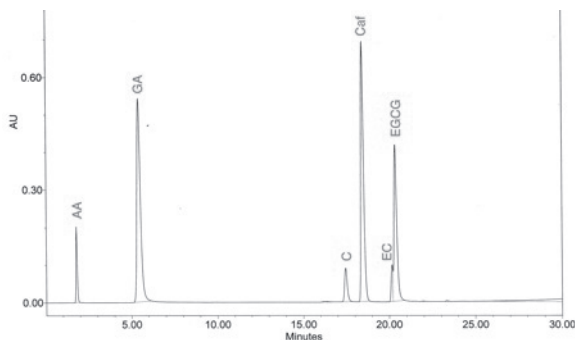


Figure 1: Chromatogram of a Standard Mixture Using 270-nm Detection

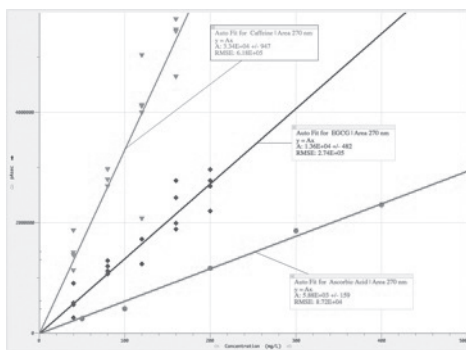


Figure 2: Standard curve of ascorbic acid, caffeine, and EGCG

Instrumentation

The Waters HPLC system used for this study consisted of an autosampler, binary pump, diode array detector, NovaPak C₁₈ radial compression column, and Millenium chromatography software. Two wavelengths (270, and 280 nm) were used for detection and peak verification, but only the results from the 270-nm chromatograms are reported here because that wavelength is nearest the λ_{max} for the analytes investigated.

Two aqueous solutions were used to generate a solvent

gradient. Solution A consisted of 99.5% Milli-Q water/0.5% acetic acid (v/v). Solution B consisted of 40% acetonitrile and 60% solution A (v/v). Solvent composition was changed from 100% A to 100% B over a 30-minute run time. The gradient was slightly concave (nonlinear), corresponding to curve 8 on the Waters solvent programmer. Acetic acid was necessary to prevent ionization of the polyphenols and resulting peak broadening. At the end of the 30-minute gradient, the solvent was returned to 100% A (1 minute) and the system equilibrated for 5 minutes.

Green Tea Preparation

The procedure for fresh green tea consisted of bringing spring water to a boil, transferring a 250-mL aliquot of the hot water to a 250-mL beaker, and steeping one tea bag in the beaker of hot water for 3.0 minutes. After removing the tea bag from the beaker, a portion was transferred to an autosampler vial with filtration through a 0.45 μm syringe-mounted membrane filter. The procedure for ready-to-drink teas was to transfer an aliquot to an autosampler vial with filtration through a 0.45 μm syringe-mounted membrane filter.

Results

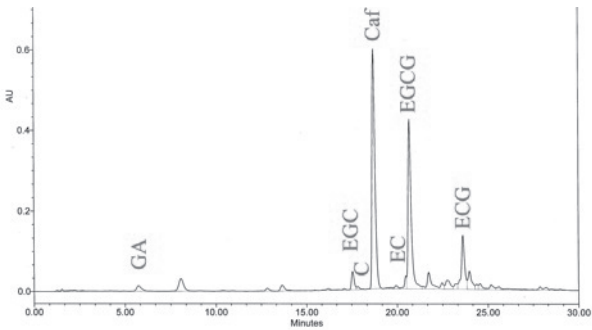


Figure 3: Chromatogram of Salada Green Tea Using 270-nm Detection

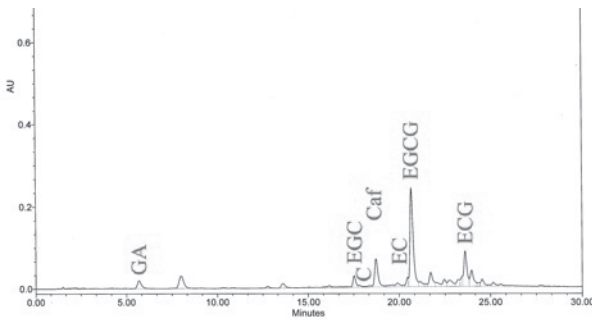


Figure 4: Chromatogram of Decaffeinated Salada Green Tea Using 270-nm Detection

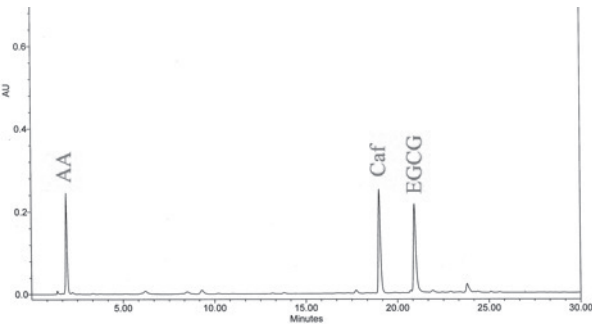


Figure 5: Chromatogram of Sobe Bottled Green Tea Using 270-nm Detection

Figure 3, 4, and 5 are examples of chromatograms of green tea samples. Figures 3 and 4 are chromatograms of Salada green tea and decaffeinated Salada green tea, respectively. The decreased caffeine peak size is apparent when comparing Figure 4 to Figure 3. Regular green tea tended to have higher peaks for most compounds including EGC, Caf, EC, and EGCG. Figure 5 is a chromatogram of Sobe Bottled Green Tea. This sample had three important peaks AA, Caf, and EGCG. The presence of ascorbic acid in the RTD product is apparent when comparing Figure 5 to Figures 3 and 4. Bottled tea also did not have many other antioxidant peaks when compared to fresh tea samples. Regular fresh green tea had the highest EGCG and caffeine peaks compared to the other two samples.

Table 1
Ascorbic acid, caffeine, and EGCG in ready-to-drink green tea

	Ascorbic Acid				Caffeine			
	Initial	After Day 28	Loss	% of Loss	Initial	After Day 28	Loss	% of Loss
Snapple Green	57	48.8	8.2	0.1	14.7	15.3	-0.6	0
Arizona	21.6	18.8	2.8	0.1	10.5	11.1	0.9	0.1
Itoen	43.2	37.4	5.7	0.1	25.2	25.3	-0.2	0
Lipton	43.5	42.5	1	0	12.8	13.2	1	0.1
Sench Shot	72.5	63.4	9.1	0.1	57	57.9	-0.9	0
Average	47.5	42.2	5.3	0.1	0	0	0	0

EGCG				
	Initial	After Day 28	Loss	% of Loss
Snapple Green	36.1	35.9	0.2	0
Arizona	11.9	11.6	0.2	0
Itoen	14.9	14.5	0.4	0
Lipton	18.9	18.5	0.4	0
Sench Shot	44.7	34.8	9.9	0.2
Average	25.3	23.1	2.2	0.1

Table 2
Ascorbic Acid, Caffeine, and EGCG in herbal fresh green tea

	Ascorbic Acid				Caffeine			
	Initial	After		% of Loss	Initial	After		% of Loss
		Day 28	Loss			Day 28	Loss	
Lipton	ND	ND	ND	ND	37.5	36.3	1.3	3.3
Lipton Lemon	ND	ND	ND	ND	24	23.5	0.5	2.1
Ginseng								
Celestial Tropical	ND	ND	ND	ND	24	24.5	-0.5	-2.1
Grape Fruit								
Celestial Cranberry	ND	ND	ND	ND	26	26.3	-0.3	-1
Pomegranate								
HAIKU	ND	ND	ND	ND	32.5	32.3	0.3	0.8
Average	ND	ND	ND	ND	28.8	28.6	0.3	0.9

EGCG				
	Initial	After		% of Loss
		Day 28	Loss	
Lipton	56.3	11.3	45	80
Lipton Lemon	28	8.3	20	70.5
Ginseng				
Celestial Tropical	14	8	6	42.9
Grape Fruit				
Celestial Cranberry	28	1.8	26	93.8
Pomegranate				
HAIKU	38.3	10.8	28	71.9
Average	32.9	8	25	71.8

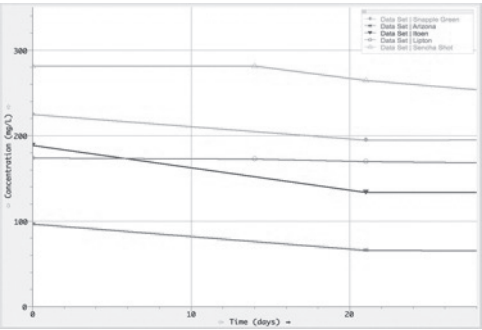


Figure 6: Graph of EGCG in bottled tea during 28 days.

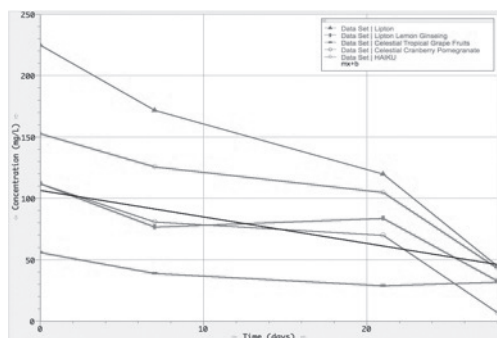


Figure 7: Graph of EGCG in herbal fresh tea during 28 days.

Tables 1 and 2 show the loss of EGCG, caffeine, and ascorbic acid by both ready-to-drink and freshly-prepared green tea during 28 days of storage in a refrigerator. Ascorbic acid was not detected in fresh herbal tea samples. The average loss by caffeine in fresh herbal tea was 0.9 % and bottled tea was 0.0 %. The average loss of EGCG in fresh herbal tea was 71.8 % whereas bottled tea was 0.1 %.

Comparing the ascorbic acid in both ready-to-drink and freshly-prepared herbal tea, bottled tea had ascorbic acid and lost a small amount after 28 days. Freshly-prepared tea did not contain a detectable amount of ascorbic acid. Both the ready-to drink and freshly-prepared herbal teas contained comparable caffeine levels and both demonstrated little tendency to decrease or increase. Freshly-prepared herbal tea initially had a higher EGCG concentration but it lost a larger amount after 28 days than bottled tea.

Figure 6 and 7 are plots of EGCG as a function of time for both ready-to-drink and freshly-prepared tea. The general trend is that the quantity of EGCG decreases with time. However, Figure 4 shows a greater slope indicating that freshly-prepared tea tends to lose antioxidants more rapidly than bottled tea.

Tables 1 and 2 illustrate that ready-to-drink teas

contained ascorbic acid and freshly-prepared teas did not have ascorbic acid. According to Center for Science in Public Interest Food Safety, soft drinks and ready-to-drink beverages have larger amounts of ascorbic acid because they may slow down oxidation since ascorbic acid is an antioxidant (Center for Science, 2009). This research indicates that ready-to-drink green teas have a longer shelf life than freshly-prepared products. Ready-to-drink products contained smaller amounts of EGCG but it was more stable than fresh herbal tea for nearly 90 days with no observed mold. Table 2 shows that freshly-prepared herbal teas have a larger amount of EGCG initially than ready-to-drink products. According to the USDA Flavonoid Content database, freshly-prepared herbal tea has a larger amount of antioxidants and may provide more health benefits than ready-to-drink tea per serving. In all products, caffeine was a very stable compound.

Freshly-prepared green tea did not have any ascorbic acid, and ascorbic acid may be added during the process of bottling or canning tea. Bottled and canned green tea may have food additives for preservation in addition to ascorbic acid. Preservatives can make shelf life longer resulting in bottled and canned samples not having any mold after long storage when compared to fresh tea samples.

Discussion

Green tea products have been developed for a variety of consumer products. Green tea is well known as a healthy beverage which has antioxidants. Green tea has a health benefit to support a healthy life. Bottled tea was developed because it is convenient to drink green tea for more people.

According to the Lipton green tea ingredient list, the product contains 100% green tea. However, Diet Lipton ready-to-drink green tea with Citrus ingredients contains water, green tea, natural flavor, and some food additives.

The food additives, sodium hexametaphosphate, calcium disodium EDTA, and ascorbic acid, are used to protect flavor and antioxidant activity. Phosphoric acid, potassium sorbate, and potassium benzoate preserve freshness by maintaining constant pH and help prevent the loss of essential nutrients. Aspartame and acesulfame potassium are used for non-calorie sweetener. Caramel color, yellow 5, and blue 1 provide desired color.

The innovation of bottled tea allowed for convenient consumption of green tea. However, some bottled teas, such as TAZO Organic Iced Green tea and Arizona Pomegranate Green Tea, have 70 calories for each 8 fl oz (240-mL) serving because sugar is used as the sweetener. Some bottled green teas are low in calorie content because aspartame is used as a sweetener. Freshly-prepared tea has no calorie content, and consumers may manage the sweetness by adding sugar or artificial sweeteners.

According to Low, Chin, Deurenberg-Yap, (2009), the United States has the highest percentage of its population that is overweight or obese. This can cause diabetes, cardiovascular disease, stroke, and some cancers. Since 1970, American portion size has grown and access to extra calorie intake has become increasingly easy (Young, & Nestle, 2002).

This study illustrated that ready-to-drink green tea beverages contain significant levels of ascorbic acid and the antioxidant EGCG. In fact, RTD products contain higher levels of ascorbic acid than freshly-prepared teas. It also verified that these RTD products retain antioxidant activity during storage better than freshly-prepared green tea. However, higher levels of the important antioxidant EGCG and fewer calories are found in green tea that is freshly-prepared from tea leaves (tea bags) by the consumer.

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Parenting Styles and College Students' Personal Agency

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Key Words: parenting styles, personal agency, college students

Abstract

Parenting styles exercise great influence on the development of personal identity formation (Luyckx, Soenens, Goossens, & Vansteenkiste, 2007). This non random pilot study aimed to examine the relationship between parenting styles and a student's sense of personal agency. Participants included 43 students from a Midwestern university. It was hypothesized that students of the Authoritative parenting style would endorse a higher sense of independence, self-esteem, and confidence, all reflective of personal agency. A small sample size in the Authoritarian and Permissive parenting styles resulted in analyzing responses in the Authoritative style only. Statistical analyses included frequencies, mean comparisons, correlations, and a reliability analysis. Students who identified their caregiver's parenting style as Authoritative endorsed a high sense of independence, self-esteem, and confidence. These findings were supported in the literature. Implications for practitioners include the promotion of Authoritative parenting in parent education classes. It is recommended that a larger and random sample be used in future research to be able to compare the three parenting styles in the development of personal agency.

Introduction

Current research supported that different parenting

styles could affect a child's development and encourage or discourage rich experiences in life (Uji, Kitamura, & Nagata, 2009; Baldwin, McIntyre, & Hardaway, 2007; Luyckx, Soenens, Goossens, & Vansteenkiste, 2007; Milevsky, Schlechter, Netter, & Keehn, 2006). Research suggested that parents who exercised the Authoritative parenting style provided their child with appropriate discipline and uniformity along with affection and warmth. Parents who practiced the Authoritarian parenting style tended to be more discipline-oriented rather than showing affection. Parents who practiced the Permissive parenting style provided warmth and affection but little discipline and uniformity. It was found that parents that provided warmth and affection along with discipline and uniformity, Authoritative parents were associated with having children who overall had less depression, higher self-esteem, and higher life satisfaction (Milevsky et al., 2006; Luyckx et al., 2007). The research addressed the interaction between parenting styles and how each affects a child's emotions, however, the research did not answer key questions on how these parenting styles could affect their child's sense of personal agency. For the purpose of this study, personal agency is defined as a person's ability to originate and direct actions for given purposes (Zimmerman, 2006) which are reflected in high self-esteem, confidence and independence. A survey was conducted at a small university in the Midwestern United States. Male and female college students 18 years of age and older were surveyed to investigate this question.

Literature Review

The studies reviewed explored the recent literature that focused on elements of adolescents' personal agency in relation to parental influences. Two of the studies used for the review were completed outside of the United States. These studies were important to the research because they

contained some of the most recent data available in this field. All four studies focused on parenting method and how they affected an adolescent or young adult's identity development. However, no study went into detail on how different parenting styles effect children and their development of personal agency as they enter early adulthood. Two of these studies used a longitudinal design to collect data. These studies examined different parenting styles including Authoritarian, Authoritative, and Permissive and the importance of each one and how they can affect individuals differently (Uji et al., 2009; Baldwin et al., 2007; Luyckx et al., 2007; Milevsky et al., 2006).

Uji et al., (2009) was a longitudinal study that looked at how maternal parenting affects conflictive interpersonal relationships in children. One of the most impactful relationships for a child is with his or her mother. With this knowledge, researchers hypothesized that a child who was provided appropriate care and autonomy would have higher moral concern. This was not true in all cases. This study refers to four effects: care, indifferent/rejections, allowance of autonomy/independence, and overprotection. This study found that while a mother provided care and allowance this had no impact on the child; if a mother provided indifference/rejection and overprotection this had negative results for the child such as shame-proneness and externalization and detachment. It was found that when a mother provided indifference/rejection there were significant negative results regarding shame-proneness, externalization and detachment. This was not true if a mother provided care and allowance; this did not affect the child in a negative or positive way. It is important to keep in mind that a major limitation of this study is that it only looked at maternal parenting styles and did not focus on paternal parenting.

Baldwin et al. (2007) conducted a study to explore the correlation of undergraduate college students' levels of

optimism based on perceived parenting styles, specifically the Authoritative and Authoritarian styles. Baldwin found that students who have Authoritative parents were more likely to have better psychosocial skills, focusing primarily on dispositional optimism, than students who grow up in families who chose to implement different parenting styles. These students also seemed to illustrate more prosocial behaviors and fewer behavioral problems throughout their adolescence and demonstrated more academic success than other students. Although the primary focal point of this study was optimism and not parenting style, optimism has been found to be a key factor in a person's overall well being. Increased levels of optimism have been found to positively influence a person's physical health as well as mental health.

Luyckx et al. (2007) conducted a longitudinal study which investigated the relationship between parenting dimensions and identity formation, more specifically on college adjustment in the realm of education. Luyckx noted that because in most industrialized nations many students continue into post secondary education, they then defer the process of their own identity formation. As a result, parents often tend to continue to have significant influence on their children throughout their young adulthood. The study looked at two basic parenting dimensions: autonomy reinforcement and psychological control. Luyckx pointed out that parenting styles (such as Authoritative, Permissive and Authoritarian) developed from a composition of parenting dimensions. The autonomy support model was found to be more consistent with volitional functioning in adolescence while the psychological control model did not. This study found that parenting can aid in identity development for many college students. However, many parents carry such great influence on their college student, causing them to defer the process of the students own identity formation. As a result, college students' sense of identity can be formed based on parental

influence.

Milevsky et al. (2006) focused on the adjustment of an adolescent and how a mother or father participates in a child's development. The parenting styles were divided into: Authoritative, Authoritarian and Permissive. The sample included 272 total students between ninth and eleventh grades, 145 males and 127 females. The survey was divided into two parts, one addressing acceptance and involvement of a parent, the second regarding strictness/ supervision. In the results, Authoritative parenting scored above average on both set of questions and was linked to higher self-esteem and life-satisfaction and lower depression. This study supported the claim that adolescent satisfaction is linked to parenting methods.

There has been much research done on different parenting styles and the repercussions that students may experience while developing personal agency as a result of these styles. However, the majority of this research has been done on adolescence; data regarding late adolescence and early adulthood is lacking. This study is a contemporary look at how parenting styles affect the college age adolescent and what effect it may have on their sense of personal agency.

Theoretical Framework

This study applied the theory of Symbolic Interaction (Ingoldsby, Miller, & Smith, 2004). The Symbolic Interaction Theory has three basic assumptions. The first assumption pertains to meaning, a person's symbolic interpretation of a stimulus. The second assumption relates to one's self concept. The third assumption is in regards to how people are influenced by society, as everyone is born into the world asocial, with no biases, and then develop values and social norms based on interactions within their new environment.

This study applied the second assumption of the theory of Symbolic Interaction. It depicts one's self

concept and their development of personal agency. This assumption also focuses on how a person's development will have an effect on their future behavior. As humans we mirror situations that have happened to us in the past. We use these situations as a foundation for future behavior. The Symbolic Interaction Theory would anticipate that a college student would develop a sense of personal agency based on whichever parenting style that their parents chose to practice. Depending on the parenting style chosen, some styles would encourage the development of traits such as independence, confidence, and self-esteem; while other styles may hinder the development of these traits. It is also possible that some styles may encourage the development of dependency, doubt and low self-esteem. This would reflect their behaviors later on in life.

Purpose statement

The purpose of this pilot study was threefold: (1) to examine the relationship between parenting styles and college students' personal agency, (2) to develop a reliable survey instrument informed by literature and theory to measure the influences of parenting styles on a college students' sense of personal agency, (3) to increase an awareness of the effects of different parenting styles and the positives or negatives effects experience with each style. Previous researchers found that Authoritative parenting was associated with advanced academic success, higher optimism, elevated self-esteem and life satisfaction (Milevsky et al., 2006). These effects are all contributing factors of personal agency. It is predicted as a result of this study that a student with Authoritative parents would have a higher self-esteem, confidence and independence which will reflect in a better sense of personal agency. In contrast, it is predicted that a student who came from an Authoritarian household will have lower self-esteem, less independence and less confidence in making independent decisions resulting in a poorer sense of personal agency.

Method

Participants

This study was conducted at a Midwestern university. The participants were 62 undergraduate students in science and psychology classes. There were 25 male participants and 37 female participants involved in this study. Of the 62 participants, there were 21 between the ages of 18-21, 31 between the ages of 20-21, six were between the ages of 22-23, three between the ages of 24-25, and one participant was 26 years of age or older. There were three participants that grew up in a single parent household with their mother, one participant grew up in a single parent household with their father, 47 participants grew up in a household that had both parents present, one participant grew up in a blended family living with their step-mother, nine participants grew up in a blended family living with their step-father, and one participant lived with both blended families, step-mother and step-father. Of the 62 participants, five self identified their caregiver's parenting style as Authoritarian, 43 participants identified as Authoritative, and 14 participants as Permissive.

Research Design

The purpose of this survey research was to use a smaller population to generalize to a similar, larger population, in which some inferences can be made about characteristics, attitudes, or behaviors of this population of college students (Babbie, 1990). This study focused on male and female students and the relationship between their self identified parenting styles and development of personal agency. The survey design type is categorized as cross-sectional survey research to gain information on attitudes from male and female students at one point in time. This study used self-administered questionnaires. The rationale for using this type of method was due to the rapid nature of the research course, convenience, and low cost. The population

was the university student population; the sample included male and female students in general psychology and science courses. This study used a nonrandom purposive sampling design. The nonrandom purposive sample allowed for the surveying of individuals from the selected courses where equitable numbers of male and female college students could be located. Randomization was not used in order to be inclusive in the classrooms. Human subjects training was completed and this study was approved by the University of Wisconsin-Stout Institutional Review Board.

Data Collection Instrument

A survey was designed in an effort to better understand the relationship between parenting styles and the development of personal agency in college students. The survey provided a description of the study including an implied consent, definitions of terms, information on the risks and benefits, time commitment, confidentiality, and provided the contact information of the researchers and supervisor.

The survey included four demographic variables: age, gender, family structure, and self-identified parenting style. There were ten close-ended statements, using a Likert scale on a continuum of 1 to 5, ranging from strongly disagree to strongly agree. The statements were informed from reviewed literature regarding parenting styles and the effects on a college student's sense of personal agency.

This survey has both face and content validity. Face validity refers to the logical connection between the statements and the concepts in the research question. Because the statements were generated by literature, the relationship between parenting styles and personal agency were apparent. Content validity as applied to this study refers to the extent to which the survey instrument incorporates the domain of the phenomenon under study. Content validity was demonstrated

in this study by incorporating a breadth of concepts on the survey instrument regarding evidence of association between the development and personal agency of a student and the perceived parenting style the student grew up with. Survey statements incorporated a wide range of issues regarding parenting styles and development of personal agency. The survey was piloted on five college students; this was to increase validity. The surveys were carefully examined and after piloting, were ready for distribution.

Procedure

After the researchers received permission to enter selected classrooms, data collection began in a science class and a psychology class in November, 2009. The researchers used a purposive design which led them to classes of students where the ratio of male to female students was approximately equitable. One researcher did brief introductions while the other researcher passed out the surveys to the classes. Randomization was not used in order to be inclusive of all the students in the class. The implied consent was read out loud as the students followed along. The students were then told that they could begin the survey after the researchers and the professor left the room to reduce any potential pressure. After the assigned survey completion time of approximately 10 minutes, the researchers and the professor returned to the room. The researchers sealed the envelopes and took them to their professor's locked office to save until data analysis.

Data Analysis Plan

The data was cleaned looking for missing data and then coded by assigning acronyms to each variable. The first four questions on the survey were demographic variables: gender, age, family structure, and self-identified parenting style: the independent variable.

Each of the following 10 dependent variables were

given an acronym name: I feel I have control over my life (*SLC*); I consider myself independent in spite of any financial support my parents may provide (*SPI*); I usually feel confident in the decisions I make (*CDM*); I feel optimistic about the choices that I have made on my own thus far (*SCO*); I consider myself to have high self-esteem (*HSE*); I adjust to new situations well without anxiety or fear (*SFA*); My parents/guardians encourage me to be independent (*PIE*); My parents trust my ability to make good decisions (*PTD*); While at college I regularly call and ask for my parents'/guardians' advice about decisions regarding my life (*PAD*); When making decisions involving my education, my parents/guardians require me to consult them first (*PSC*).

For data analysis, the computer program named *Statistical Package of the Social Sciences* (SPSS) was used. The individual was used as the level of analysis. The statistical analyses that were conducted include: frequencies, means comparisons, analysis of variance, and a reliability analysis: Cronbach's Alpha.

Results

All variables were subjected to frequency distribution analysis; the results revealed that there was no missing data. However, due to a low sample size in the Authoritarian and Permissive parenting style groups, only the Authoritative style was analyzed and correlations were added to the analysis replacing the analysis of variance.

For the variables (*SCO*) and (*SPI*) many of the participants agreed that they felt independent and confident in the decisions that they have made. For the variables (*PIE*) and (*PTD*) a number of participants agreed that they felt their parents trust their ability to make good decisions and encouraged them to be independent; however, there were some who were undecided. Many of the participants agreed with variables (*SLC*) and (*CDM*) stating that they felt they

had control over their live and felt confident in the decisions that they made. For variable (*PAD*) participants were divided between strongly agree and strongly disagree involving the idea of calling their parents for advice; this is one of the only questions where participants answered strongly disagree. For variable (*PSC*) many of the participants stated they strongly disagreed with the idea that their parents required them to consult about educational choices. The participants also agreed with variable (*HSE*) stating that they considered themselves to have high self-esteem. The variable (*SFA*) had over a quarter of the participants undecided with a large number agreeing that they adjusted to new situations well without anxiety or fear (Refer to Table 1 for Frequency Distribution and Table 2 for Mean Comparisons).

Table 1
Frequency Distribution

Variable	SD	D	U	A	SA	Total
SLC	0.0%	4.7%	7.0%	58.1%	30.2%	100.0%
SPI	0.0%	9.3%	9.3%	39.5%	41.9%	100.0%
CDM	0.0%	11.6%	2.3%	67.4%	18.6%	100.0%
SCO	0.0%	4.7%	16.3%	46.5%	32.6%	100.0%
HSE	0.0%	14.0%	18.6%	46.5%	20.9%	100.0%
SFA	7.0%	11.6%	27.9%	41.9%	11.6%	100.0%
PIE	0.0%	4.7%	11.6%	25.6%	58.1%	100.0%
PTD	0.0%	2.3%	14.0%	27.9%	55.8%	100.0%
PAD	16.3%	4.7%	14.0%	46.9%	18.6%	100.0%
PSC	20.0%	32.6%	25.6%	11.6%	9.3%	100.0%

Note: (SLC) = I feel I have control over my life; (SPI) = I consider myself independent in spite of any financial support my parents may provide; (CDM) = I usually feel confident in the decisions I make; (SCO) = I feel optimistic about the choices that I have made on my own thus far; (HSE) = I consider myself to have high self-esteem; (SFA) = I adjust to new situations well without anxiety or fear; (PIE) = My parents/guardians encourage me to be independent; (PTD) = My parents trust my ability to make good decisions; (PAD) = While at college I regularly call and ask for my parents'/guardians' advice about decisions regarding my life; (PSC) = When making decisions involving my education, my parents/guardians require me to consult them first.

Table 2
Compare Means Table

	SLC	SPI	CDM	SCO	HSE	SFA	PIE	PTD	PAD	PSC
Mean	4.14	4.14	3.93	4.07	3.74	3.40	4.37	4.37	3.47	2.56
SD	0.74	0.94	0.83	0.83	0.95	1.07	0.87	0.82	1.32	1.22
Range	3.00	3.00	3.00	3.00	3.00	4.00	3.00	3.00	4.00	4.00

Note: (SLC) = I feel I have control over my life; (SPI) = I consider myself independent in spite of any financial support my parents may provide; (CDM) = I usually feel confident in the decisions I make; (SCO) = I feel optimistic about the choices that I have made on my own thus far; (HSE) = I consider myself to have high self-esteem; (SFA) = I adjust to new situations well without anxiety or fear; (PIE) = My parents/guardians encourage me to be independent; (PTD) = My parents trust my ability to make good decisions; (PAD) = While at college I regularly call and ask for my parents'/guardians' advice about decisions regarding my life; (PSC) = When making decisions involving my education, my parents/guardians require me to consult them first.

Correlations were run on *SLC*, *SPI*, *CDM*, *SCO*, *HSE*, *SFA*, *PIE*, *PTD*, *PAD* and *PSC*. It appears as if there are quite a few significant relationships between the variables. The strongest is between *SCO* and *CDM* (Refer to Table 3).

Table 3
Pearson Correlation Matrix

	SLC	CDM	SCO	HSE	SFA
SLC		.558**		.522**	.527**
CDM			.563**	.610**	.541**
HSE					.544**

Note: (SLC) = I feel I have control over my life; (CDM) = I usually feel confident in the decisions I make; (SCO) = I feel optimistic about the choices that I have made on my own thus far; (HSE) = I consider myself to have high self-esteem; (SFA) = I adjust to new situations well without anxiety or fear. ~N=62; **significant at $p < 0.01$ (two-tailed).

A reliability analysis was run to see if the ten variables: *SLC*, *SPI*, *CDM*, *SCO*, *HSE*, *SFA*, *PIE*, *PTD*, *PAD* and *PSC* were a reliable measure of the main concept: Does parenting style affect a child's sense of personal agency. Cronbach's Alpha is a calculation of reliability and in this analysis it was 0.715. This indicates that the survey questions were a reliable measure of the main concept. At the end of a number of the surveys there were qualitative comments. These comments will be analyzed in the Discussion section.

Discussion

The results partially supported the hypothesis that students raised with Authoritative parenting would report characteristics of personal agency, including: self-esteem, confidence, and a sense of independence. Parenting style groups were not able to be compared given the small sample number in the Authoritarian and Permissive groups. Significant positive correlations were found and supported in the literature (Baldwin et al., 2007; Luyckx et al., 2007; & Milevsky et al., 2006). Each of the dependent variables will be discussed in relation to the literature followed by limitations of the study, implications for practitioners, implications for future research, as well as final comments.

All of the studies focused on parenting methods and how they affected an adolescent or young adult's identity development. The majority of respondents agreed that they considered themselves to be independent despite any financial support. This was supported in the literature that students who were raised with authoritative parenting had conscious independent decision-making skills (Luyckx et al. 2007). The survey statement regarding regularly calling parents and asking advice about life was inspired by the literature which stated that parents who had a great deal of influence on their children often cause the delay of their identity development (Luyckx et al. 2007). A majority of respondents reported that they regularly call and ask their parents for advice about their lives. These findings contradicted previous research findings. While students reported regularly calling and asking for their parents' advice, they also reported the development of personal agency. Findings showed that even with continued parental influence, students still proceeded in their own identity development. For the survey statement about confidence in decisions that the student makes, the great majority of respondents agreed that they felt confident in making their own decisions. Luyckx et al. (2007) stated

that Authoritative parenting resulted in conscious decision-making. Milevsky et al. (2006) pointed out that high self-esteem was a characteristic of Authoritative parenting. This suggests that the use of the Authoritative parenting style fosters students who have high self-esteem along with conscious decision-making skills. This finding was reflected in the results that a majority of respondents identified with having high self-esteem. In addition, a significant correlation was found between students who felt confident in the decisions that they made and students who had high self-esteem. The next survey statement was that students felt optimistic about the choices that they have made on their own thus far, in which a great majority of respondents agreed. According to Baldwin et al., students who have Authoritative parents are likely to have better dispositional optimism (2007).

A few survey statements were not taken from the literature verbatim, however were inspired by inferences made by combining separate research findings. A majority of respondents agreed with the statement that they felt a sense of control over their life. This statement was supported by inferences made from Milevsky et al. (2006) concerning higher self-esteem and life satisfaction and Luyckx et al. (2007) regarding conscious decision-making. It was hypothesized that the combination of these traits in an individual would contribute to the overall feeling of a sense of control over their life. Significant correlations were found between students who felt optimistic about decisions that they have made thus far and who felt confident in the decisions they make. This was supported by the literature from Baldwin et al. (2007) reinforcing that higher optimism is associated with the Authoritative parenting style and Milevsky et al. (2006) reinforcing that higher self-esteem is also associated with the Authoritative parenting style. It was also hypothesized that higher self-esteem would be highly associated with higher confidence. There were significant correlations

found between those students who felt confident about their decisions and students who adjusted to new situations well without anxiety or fear. Regarding adjusting to situations without anxiety, Milevsky et al. found a connection between Authoritative parenting and the survey statement inquiring about mood fluctuation. The emotional states of anxiety and fear can be associated to levels of depression (2006). Although Milevsky focused on depression, these ideas were closely related by the connection of anxiety and fear with depression. Another statement that was added was regarding parents' trust in the students making good decisions. This statement was included to reflect not only how students felt about their own decision-making, but also what they interpreted being communicated from their parents and whether they felt supported or discouraged. The majority of participants agreed with the statement that they felt their parents' trust in making their own decisions. In regards to the statement that *parents require me to consult them about educational decisions*, results were mixed. This statement was inspired by Luyckx et al. who found that parents' caring had a great influence on the student, and that if they provided too much stability the student would rely too much on the parents (2007). Researchers speculated the mixed results may have been due to language of the question and the use of the term 'require' as well as lack of specification of what the term 'educational decisions' includes. Also some consultation about educational decisions is a result of financial assistance a student receives from their parents or guardians which was also not accounted for in the measurement of the statement. As a result, the ambiguous nature of the statement could have lead to variations in interpretation of the statement.

Limitations

This study used a nonrandom sample and therefore was unable to generalize and compare to the larger population

of college students.

Implication for Practitioners

The results from this study show that there are many positive outcomes for young adults of the Authoritative parenting style as it relates to personal agency. Family practitioners can use this research to help increase parent education about the positive outcomes that result from Authoritative parenting.

Implication for Future Research

The next step of research may be to explore the Authoritarian and Permissive parenting styles in greater depth and compare groups as this research originally intended. This would involve having a larger sample size as well as use a more random sampling method to try and encompass as much diversity as possible to be able to generalize to a larger population of college students. The Cronbach's Alpha would rise from .715 to .761 if the following question was removed from the study: *PSC: when making decisions involving my education, my parents/guardians require me to consult them first*. This question also had a high number of undecided answers. This may be because of the word 'require' can carry different connotations. If someone was to replicate this question it is advised to change the question to "*when making decisions involving my education, my parents/guardians would like me to consult them first*." The other question that had a lot of undecided responses was "*I adjust to new situations well without anxiety or fear*." This question may have not been stated clearly enough. It is recommended to rephrase this question if used in future research. In addition, using a more varied scale might accommodate the undecided responses.

Conclusion

The intention of this study was to investigate the connection between different parenting styles and the college student's sense of personal agency. Findings revealed that promoting authoritative parenting can lead to early development of personal agency. An authoritative parenting style has been proven to be an effective means of parenting. It is also positively correlated with high self-esteem, confidence, and independence, which can facilitate personal agency.

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Adam Gruetzmacher

Undergraduate Student, Fine Arts

My work in ceramics is an examination of the understanding of what makes a pot fundamentally viable as a means of communication. As a craftsman I find myself contented through the creation of the functional object, and as a visual artist I strive to activate my work with a vitality that is visual as well as tactile. Through my own interaction with other artist's work I have found that pottery personifies an ongoing dialogue between maker and user. The way in which a pot is used is central to its significance. With this understanding I make forms that speak about process and utility, without being overly strident. I am interested in the exploration of profile and volume, derivative of the human figure and inspired by the structure of the skeleton. I reference this idea of underlying, soft structure juxtaposed with hard architecture in my work.

Design is important to me. Both two and three-dimensionally the work I make needs to be visually appealing as well as functional. On a two-dimensional level this means that decoration should make sense both within the form as well as with its surroundings; one object needs to talk about and inform others and vice versa. I utilize texture to give the user an awareness of surface and proportion. Three-dimensional forms create shadow and line and in this way contribute to the surface of the object. Negative space is a crucial formal element as it becomes as important as the actual object. The space around my forms acts to lift and give life to curves, or further emphasizes the grounded disposition of mass. The objects I create are informed by necessity and are rooted in history and tradition; these are things that people use. This realization is one of guidance and of community as I discover myself within a discipline as well as a distinctive period of time. I am inspired and animated by the hand made, and find myself fascinated by an aesthetic drawn from experience.



“Stacker Jar” 2009 Cone 2 earthenware, glazes. Electric fired. 11.5/5/5in.

*"Three Tumblers" 2009 Cone 2 earthenware,
glazes. Electric fired. Largest is 5.5/3/3 in.*

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*"Three Tumblers" 2009
Cone 2 earthenware, glazes. Electric fired. Largest is
5.5/3/3 in.*



*"Three Pouring Vessels" 2008
Cone 10 porcelain. Soda fired with shino glazes.
Largest is 5.5/4/4 in.*



"Ash Vase" 2008
Cone 10 stoneware and fake ash glaze. 14/7/7 in.

Briana Roesler
Undergraduate Student

My paintings translate familiar urban environments into non-representational arrangements based on perceived colors at a particular location. The paintings employ horizontal bands of color to represent these urban environments as abstracted compositions. At first glance, these strips of color might appear visually ambiguous, but are in fact meticulously researched.

I choose my locations based on my place of origin, Saint Paul, Minnesota, and the ritualistic act of traveling to and through this place. Important locations such as my elementary and high schools, a restaurant in which I worked for several years, and the view from my front porch are the subjects of my paintings. Before I transfer digital photographs into Adobe Illustrator to create final compositions, I revisit these select locations in an effort to collect experiential information that memory alone cannot invoke. I respond to, and document, these experiences (“revisitations”) of nostalgia, with written notations and drawings as a precursor to the final compositions.

My observations influence my color choices as well as the width of the bands of color, which are based off of the percentage of the color in the place. Adobe Illustrator assists me in mapping out compositions. My knowledge of color theory guides my formal choices; for example, using narrow panels that mimic the horizon line and draw the viewer closer to investigate the surface. Precision is tremendously important in my work; however, I do not want to completely erase the evidence of the artist’s hand. This speaks to the contrast of the architecture and the feeling of nostalgia. Thus, I use a painted surface as a way to reconnect with the locations I chose, creating an intimate experience with the painting that will expose the emotional response to each place.

Each painting is a separate piece and meant to be experienced individually. It is my hope that the series as a whole creates a sense of place. The paintings are wrapped around the edges of the panels, turning these into 3-dimensional objects that suggest space. The panels are kept small, which translate the proportions of the photographs, speaking to memory, nostalgia, and documentation. Combined, these elements speak to the importance of the locations and the emotions felt when returning to these specific places by transforming these works into intimate objects. The work is titled with the geographical coordinates. This gives enough information for the viewer to know these are specific places, but leaves it open to personal interpretation based on the perceived ambiguity of the composition. The series reconnects me to the locations and invites me to experience these places with fresh eyes, while continuing to hold onto the familiar emotional response.

44°56'44.18"N 93°10'01.83"W, 2009

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Acrylic on panel, 1" x 4" x 24"



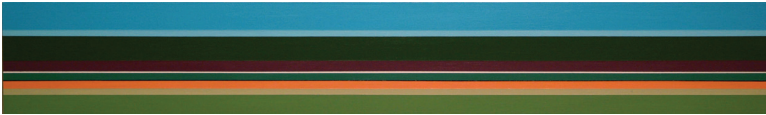
44°56'44.18"N 93°10'01.83"W, 2009

Acrylic on panel, 1" x 4" x 24"



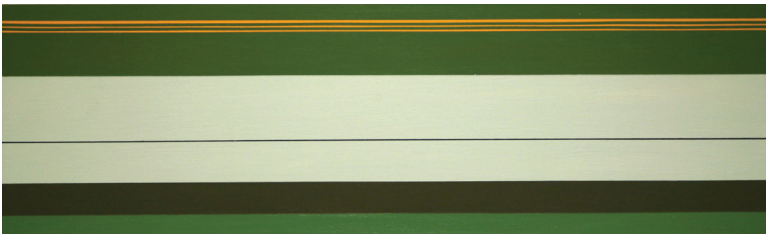
44°55'30.58"N 93°09'26.64"W, 2009

Acrylic on panel, 1" x 8" x 24"



44°57'09.45"N 93°11'03.23"W, 2009

Acrylic on panel, 1" x 4" x 24"



44°56'38.88"N 93°10'49.33"W, 2009

Acrylic on panel, 1" x 8" x 24"

Kiley Van Note*Undergraduate Student*

These paintings are a recollection of narratives from individuals that I have encountered throughout my life who have influenced my art, and are a part of my journey towards self-discovery. In recent years, my focus has grown closer towards the working class. Their daily lives are meant to teach the viewer about an uncelebrated part of humanity. By painting them, I honor their position and acknowledge their presence as a person rather than being seen as someone who is just meant to serve.

My concept of addressing the working class first developed when I made a series of paintings of my grandfather's boots. They were meant to show a personal narrative of what kind of work day he would face due to the mental and physical deterioration as he ages. Viewers stated they related to the boots in a personal way. I felt compelled to continue this idea and create a visual language with the audience about subject matters that many working class people confront daily.

Shortly thereafter, my family and I were faced with the dilemma of my father's health issues caused by years of working in the food service industry.

As I grew up, my relationship with my father was strained because of his absence; he worked long shifts as a line cook. However, seeing my father sink deeper into depression during his lapse of work, or lay helpless in a hospital bed after surgery, allowed me to see him as a human being rather than a parental figure. Since his recovery our relationship has changed. Creating paintings of my father's story has allowed a better understanding of one another, he as a provider and me as an artist.

My father's personal struggles provoked a need to dig deeper into the working class and focus on areas such as race, class, gender, age, and identity. Through my research

I have discovered that my father is like millions of people throughout history who have toiled at a job, but received little respect. Even though I did not hold a place in the food industry, my personal experiences of working in customer service also granted me insight into the perceptions of others that a middle-class worker faces. A co-worker of mine once told me about interacting with customers in her workday, she said, "I don't care if they dislike me as long as they're not dismissive of me."

The painting process is a chance to confront society's commonality, and counterbalance it with my own perception and sense of justice. The paintings, with their colors, lines and marks are complex and involved, much like the people's stories I choose to narrate. My method is to first take a photograph of the person, and then transfer it to canvas by drawing as well as mapping out colors with an under painting. This under painting, although covered over, mirrors the complexity and hidden psychology of each person I paint. Lastly, as the brush moves and the final image emerges so do the character's persona and a reflection of what I see as their true colors. Specifics such as name, age, and class are elusive, however their body language, the setting and the expression on their face are meant to depict an account that goes far beyond surface level readings. I leave it to the viewer to wonder if they would recognize this person in a store or a restaurant. Also, I wish for the audience to have an acute sense of awareness, and confront some of realities of humanity, when faced with these paintings.



Soles 2 [Series], 2008, Oil on Canvas, 2'x3'

This painting was part of a series of images of my grandfather's work boots to which he was going to dispose of, until I believed they carried a sense of nostalgia and represented him as a person. This perspective was to represent him looking at the boots.



Deep Surrender, 2008, Oil on Canvas, 3'x4'

This painting was a scene I would often catch my father doing on a series of nights after he would get home from work. My focus here was to capture the feeling of physical and mental exhaustion from a laborious job.



Much of It Cannot Be Undone, 2009,
Oil on Canvas, 3 ½' x 6'

This painting was painted during a time where my father had spinal surgery due to work-related injuries. He spent duration of time in the hospital and I felt the need to capture this traumatic event in our family.



Life is Good, 2009, Oil on Canvas, 3 ½ x 5'

This painting was to represent my father in his work environment after post-operation and return to work as a cook.

Sean Larson*Undergraduate Student*

Currently, my work in clay is centralized in the idea of flesh and the organic. Reference points for my work include historic and contemporary forms, organic objects, and ceramic art made by artists I truly adore. These all inherently influence my work. I am constantly drawing from them for inspiration. Forms I have observed, even for just a moment, find a way to escape my subconscious and evolve.

I find breath captured by plants, and the fullness and softness of the body, all extremely vital in the construction of my pieces. It soon became obvious these aspects of connection, softness, and breath must be introduced into my work. Each piece has a connected, yet unique feel, which binds my work together while keeping each piece individually unique.

Stemming from the most prehistoric of levels, man as maker has an inherent need to be involved in a tactile experience. It is this primal need to construct and manipulate material that impels me to work within my chosen medium. As my work is used, it is my hope that the user will be pulled from their fast paced life and appreciate a moment of reflection. This generation is extremely consumed in the “fast lane” lifestyle. It is my intention to create an opportunity where one can escape that drive, that “go go go” mentality, we are all forced into just by existing in this society at this time.

Reflecting upon the ever so present question of “Why do I make what I make?” I have concluded that as an artist, even as a human, we are compelled to create, design, manipulate and modify material. From the beginning of time man has been doing this. We have “forged” our way through history. My adolescence has played a major role in who I am and what I make today also. Branching from childhood, when I would frolic through the woods, catch insects, reptiles, amphibians, and anything that looked peculiar to me, was when I was impacted and “branded” with the influences that are ever so present in my work now. The strange and bizarre are, in my mind, the most interesting of plants and animals, and as an artist I can now see them appearing in my work over and over as I create.

The act of making and the pleasure I get inside upon finishing a piece of work, are all reasons why I am consumed by my work. My investigation in porcelain has produced forms that allude to organic and biological forms; vibrant colors penetrate through somber tones. Flesh like undulations roll over and conceal hidden parts, asking for further examination. Forms that were once soft and inviting have now transformed into tactile, biomorphic pots that conceivably “bite back”.

*"Bud vase" Porcelain, cone 10 oxidation,
sprayed and brushed glazes 5.5"x5.5"x9" 2009*

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"Bud vase"
Porcelain, cone 10 oxidation, sprayed and brushed glazes
5.5"x5.5"x9"
2009



"Bowl"
Porcelain, cone 10 oxidation, sprayed and brushed glazes
9"x12"x12"
2009



“Flower brick”

Porcelain, cone 10 oxidation, sprayed and brushed glazes
9”x9”x14”



“Creamer/Sugar Set

Porcelain, cone 10 oxidation, sprayed and brushed glazes
6.5”x7.5”x10”
2009